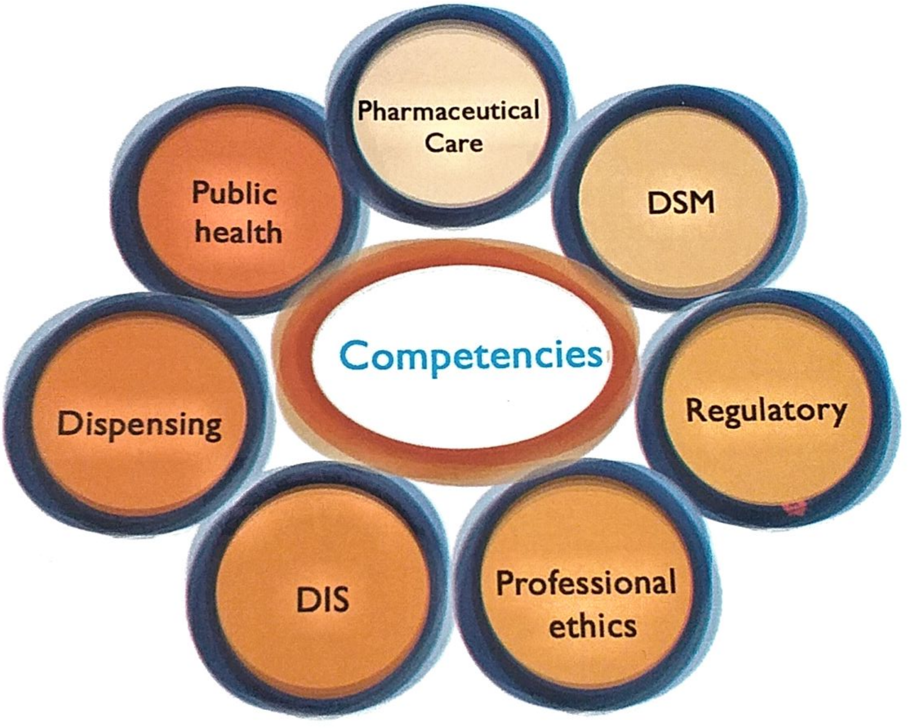
# Competency-Based
# Multiple Choice Questions for Pharmacists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## COC Preparatory Questions for Pharmacists

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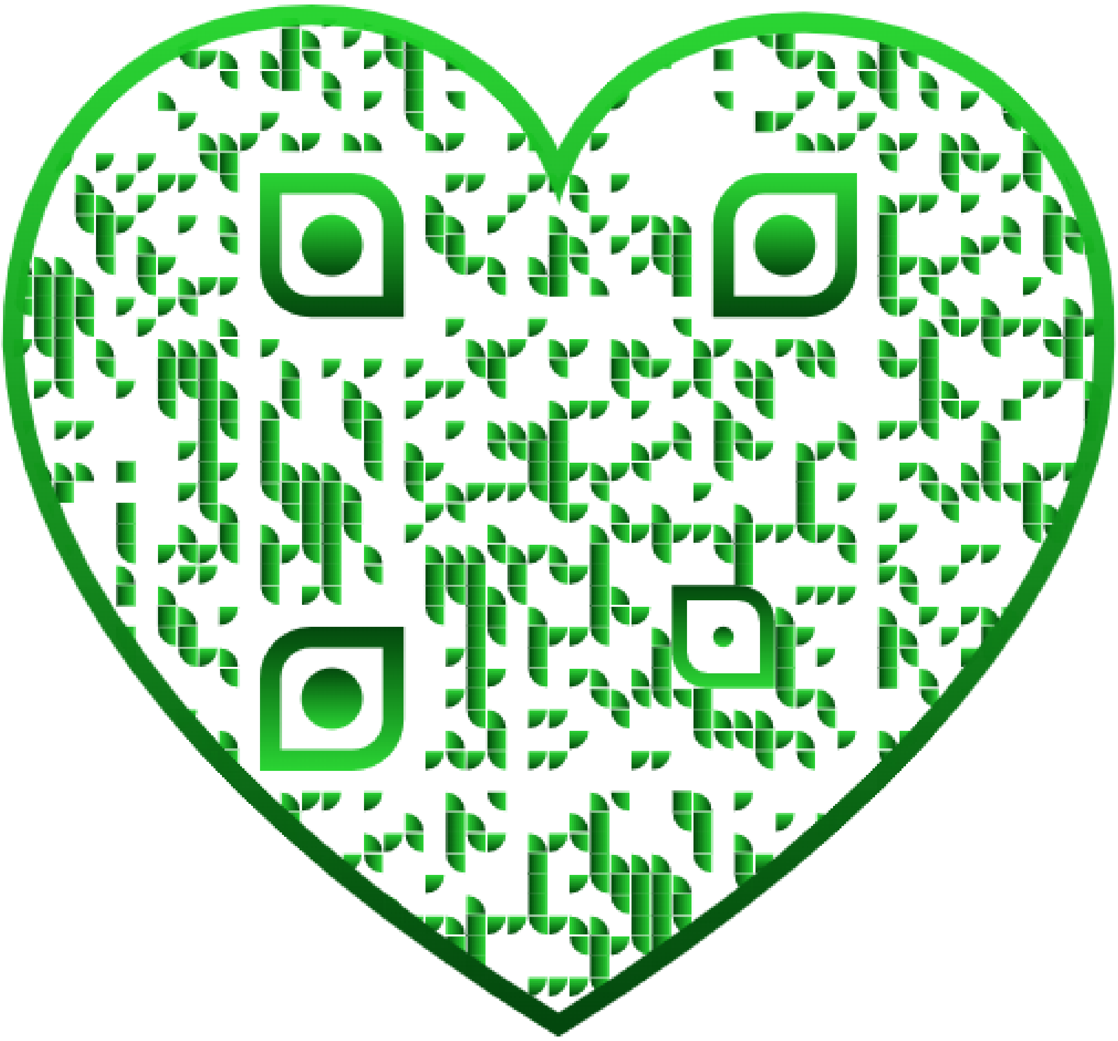

1. A-50-year-old man has a history of frequent episodes of renal colic with high calcium renal stones. The most useful agent in the treatment of recurrent calcium stones is:
   A. Mannitol
   B. Spironolactone
   C. Furosemide
   D. Hydrochlorothiazide
2. All of the following statements about efficacy and potency are true **except**:
   A. Efficacy is usually a more important clinical consideration than potency
   B. Efficacy is the maximum effect of a drug
   C. Potency is a comparative measure, refers to the different doses of two drugs that are needed to produce the same effect
   D. The $ED_{50}$ is a measure of drug's efficacy
3. Which of the following is a type of drug-to-drug interaction which is related with processes of absorption, biotransformation, distribution and excretion?
   A. Pharmacodynamic interaction
   B. Physical and chemical interaction
   C. Pharmaceutical interaction
   D. Pharmacokinetic interaction
4. For therapeutic application, local anesthetics are usually made available as salt forms. The major reason of making salt form of these drugs is to make:
   A. Less toxicity and higher potency
   B. More stability and greater water solubility
   C. Higher stability and greater lipid solubility
   D. Less local tissue damage and more potency

5. The primary mechanism of action of local anesthetics is:

A. Activation of ligand-gated potassium channels
B. Blockade of voltage-gated sodium channels
C. Stimulation of voltage-gated N-type calcium channels
D. Blockade the GABA-gated chloride channels

6. All of the following are possible symptoms of atropine poisoning **except**

A. Mydriasis, cycloplegia
B. Hyperthermia, dry mouth, hot and flushed skin
C. Agitation and delirium
D. Bradycardia, orthostatic hypotension

7. Selective α1 receptor antagonists such as tamsulosin, terazosin, and alfuzosin are very effective in the management of:

A. Hyperthyroidism
B. Benign prostatic hyperplasia (BPH)
C. Cardiac arrhythmias
D. Heart failure

8. Propranolol can be used in the treatment all of the following diseases **except**:

A. Cardiovascular diseases
B. Migraine headache
C. Hyperthyroidism
D. Bronchial asthma

9. Which of the following is **true** about metoprolol and atenolol?

A. Are members of the $\beta_1$-selective group
B. Are nonselective β-antagonists
C. Have intrinsic sympathomimetic activity
D. Have an anesthetic action

10. Which of the following therapeutic agents are used in the treatment of insomnia?

A. Benzodiazepines
B. Barbiturates
C. Imidazopyridines
D. All of the above

11. Barbiturates are used in the emergency treatment of status epilepticus in infants and children because of:

A. They protecting cerebral edema and ischemia
B. Short onset and duration of action
C. They do not have effect on sleep architecture
D. All of the above

12. The main reason for giving levodopa, the precursor of dopamine, instead of dopamine in the management of Parkinson's disease is:

A. Dopamine does not cross the blood-brain barrier
B. Dopamine may induce acute psychotic reactions
C. Dopamine is intensively metabolized in humans
D. All of the above

13. Select the agent, which is preferred in the treatment of the drug-induced form of parkinsonism:

A. Levodopa
B. Benztropine
C. Bromocriptine
D. Dopamine

14. Which one of the following is a non-narcotic analgesic, which lacks an anti-inflammatory effect?

A. Diclofenac
B. Ibuprofen
C. Paracetamol
D. Aspirin

15. In which of the following disease conditions could aspirin be used prophylactically?

A. Noncardiogenic pulmonary embolism

B. Peptic ulcers

C. Atherosclerosis

D. Ischemic stroke

16. Which one of the following is a semisynthetic weak opioid analgesic?

A. Tramadol

C. Morphine

B. Sodium valproate

D. Butorphanol

17. The most important counseling information to convey to a 40-year-old man taking omeprazole for an NSAID-induced ulcer is:

A. Take the omeprazole at the same time you take the NSAID.

B. Take the omeprazole 15 to 30 minutes before breakfast.

C. Take the omeprazole 1 hour before or 2 hours after a meal.

D. Take omeprazole at bedtime

18. A person with a fasting plasma glucose value of 120 mg/dL and a post-OGTT 2-hour plasma glucose value of 135 mg/dL would be characterized as having

A. Impaired glucose tolerance

B. Impaired fasting glucose

C. Type 2 diabetes mellitus

D. Normal serum glucose level

19. Which of the following is a risk factor for development of type 2 diabetes mellitus?

A. Low serum uric acid concentration
B. Heart failure
C. Acute renal failure
D. History of gestational diabetes mellitus

20. Which of the following describes a situation in which metformin therapy should be withheld either temporarily or permanently?

A. Receipt of oral contrast material for an upper GI series
B. Development of advanced renal insufficiency
C. Onset of a short, self-treated viral illness
D. New-onset stage A heart failure not requiring pharmacologic therapy

21. Which of the following is first line and associated with a lower risk for all-cause mortality and cardiovascular mortality in obese patients with type 2 diabetes mellitus?

A. Glyburide
B. Metformin
C. Insulin
D. Piogitazone

22. Enalapril may be preferable to captopril because:

A. It is less likely to induce hypotension in patients on diuretic therapy
B. It is a newer ACEI and therefore must be better
C. It has a longer half-life allowing once daily dosing for hypertension
D. It has a slightly different side effect profile

23. Which of the following is a preferred initial antihypertensive therapy for a 63-year-old woman who was diagnosed with hypertension and has a history of ischemic stroke (6 months ago), with a BP of 166/108 and 164/106 mm Hg in two consecutive measurements?

A. A thiazide-type diuretic with an ACE inhibitor
B. A thiazide-type diuretic with a nonselective ß-blocker
C. An ARB alone
D. A thiazide-type diuretic alone

24. Among drugs affecting gastrointestinal function all of the following medications are not recommended for patients complaining constipation **except**:

A. Anticholinergics drugs
B. Opiates
C. Magnesium antacids
D. Aluminum containing antacids

25. Which of the following would be the best regimen to initiate for 50 years old male patients having diabetes mellitus, hypertensive and stage 3 chronic kidney diseases?

A. ACEI plus loop diuretic
B. CCB plus ß-blocker
C. ACEI plus thiazide diuretic
D. ß-blocker plus loop diuretic

26. Which of the following is/are potential reasons for a more rapid progression of renal failure among patient with pre-existing renal problem?

A. Poorly controlled hypertension
B. Volume depletion
C. Use of nephrotoxic drugs
D. All of the above

27. Which one of the following is the most common gastrointestinal symptom that accompanies migraine attack?

A. Constipation

B. Nausea/vomiting

C. Diarrhea

D. Abdominal bloating

28. Which of the following would not be appropriate for migraine prophylaxis?

A. Selective ß-blockers

B. ß-blockers with intrinsic sympathomimetic activity

C. Anticonvulsants

D. Calcium channel blockers

29. Guidelines for drug therapy of epilepsy during pregnancy include:

A. Supplementation of 100 mcg folic acid daily

B. Substitution of phenobarbital for other drugs

C. Use of antiepileptic drug monotherapy if possible

D. Drug withdrawal 1 month prior to attempted conception

30. Which one of the following is the preferred drug for the initial treatment of migraine in pregnancy woman?

A. Indomethacin

B. Acetaminophen

C. Sumatriptan

D. Codeine

31. Which one of the following is the common indication of antenatal corticosteroid administration is to for some pregnant women?

A. Stop preterm labor

B. Treat maternal group B Streptococcus infection

C. Prevent neonatal respiratory distress syndrome

D. Augment labor analgesia

32. Bacterial organisms responsible for the most common causes of infectious diarrhea include all of the following **except**:

A. Escherichia coli

B. Staphylococcus species

C. Salmonella species

D. Shigella species

33. A woman who is 6 weeks postpartum and breast-feeding seeks contraception. She would like to have another child in the next 1 year. Which of the following is the preferred method of contraception for this woman?

A. Combined oral contraceptive

B. Progestin-only pill

C. Depo-medroxyprogesterone acetate

D. Transdermal contraceptive

34. A 23-year-old frantic woman comes to the pharmacy asking for help in choosing a home pregnancy test. She said that her partner's condom was broken during intercourse last night and she worried that she might be pregnant. She started her last period 18 days ago. You recommend that she

A. Do not worry the chance to be pregnant is very rare

B. Provide emergency contraception

C. Discus with her doctor for an additional method of hormonal contraception

D. Purchase a home pregnancy test to use if her period is late

35. A male patient complains that he is unable to have satisfactory intercourse with his wife because his penis cannot get erect. This patient has which type of sexual dysfunction?

A. Decreased libido

B. Premature ejaculation

C. Erectile dysfunction

D. Infertility

36. When a systemic antibiotic is needed for the management of gestational acne, which one is the safest option?

A. Erythromycin

B. Tetracycline

C. Trimethoprim-sulfamethoxazole

D. Ciprofloxacin

37. Which one of the following statements is **incorrect** about different types of iron preparation?

A. A 325mg tablet of ferrous sulfate contains 65mg of elemental iron

B. A 300mg tablet of ferrous gluconate contains 35mg of elemental iron

C. A 325mg tablet of ferrous sulfate contains 35mg of elemental iron

D. A 100mg tablet of ferrous fumarate contains 33mg of elemental iron

38. Which of the following change in white blood cell count is the most indicative of a bacterial infection?

A. Increase in lymphocytes

B. Increase in immature neutrophils

C. Increase in eosinophils

D. Increase in monocytes

39. A 15-year-old male presents to the emergency department with a bite wound to his forearm obtained during a playful fight with his younger brother. The wound is cleaned and shows no signs of infection. Appropriate management at this time would be:

A. Amoxicillin/clavulanic acid for 3–5 days

B. Cephalexin for 5–10 days

C. Erythromycin for 7–10 days

D. No antimicrobial therapy, but keep the wound clean and covered

40. Altered mental status, change in eating habits, or GI symptoms as opposed to typical manifestations of urinary tract infections are frequently seen in which patient population?

A. Children
B. Pregnant females
C. Elderly men
D. Any young women

41. A 6-year-old elementary school student seen in the clinic is found to have lice infestation of the scalp. Measures to eradicate the infection in the patient and the rest of the family include:

A. Calamine lotion with 1% menthol and sterilization of all bedding and clothes
B. Sulfur ointment and sterilization of all bedding and clothes
C. Permethrin 1% solution and sterilization of all bedding and clothes
D. Permethrin 5% cream and sterilization of all bedding and clothes

42. All of the following should be assessed daily in a patient with acute renal injury, **except**?

A. Liver aminotransferases
B. Weight
C. Serum creatinine
D. Urine output

43. The reason that troponin is preferred over creatinine kinase (CK) in the diagnosis of myocardial infarction (MI) is that:

A. Troponin increases and decreases more quickly than CK-MB
B. Troponin stays elevated shorter compared to CK-MB
C. CK is more specific for myocardial cell necrosis than CK-MB
D. Troponin is more specific for myocardial cell necrosis than CK

44. All of the following therapeutic options would be reasonable to overcome diuretic resistance in a patient currently taking furosemide 40 mg orally twice a day **except:**

A. Changing to spironolactone 25 mg daily
B. Increasing the dose of furosemide to 80 mg orally twice daily
C. Changing to furosemide 40 mg IV twice daily
D. Adding hydrochlorothiazide 25 mg orally once daily

45. MW is diagnosed with a left lower extremity deep vein thrombosis (DVT) and is initiated on enoxaparin and warfarin therapy. How long should enoxaparin and warfarin be overlapped?

A. For at least 4 days as long as the International Normalized Ratio (INR) is greater than 2.0
B. For at least 5 days and until the INR is greater than 2.0
C. For at least 7 days and until the INR is greater than 2.0
D. Enoxaparin therapy can be discontinued once INR is greater than 2, regardless of the length of therapy

46. A 74-year-old female patient has systolic heart failure with a presumed etiology of hypertension. She has minimal SOB and dyspnea on exercise (DOE) and trace pedal edema. She complains of a dry cough that has been present since she began treatment for heart failure, and she finds the cough moderately bothersome. Her current medications include enalapril 10 mg twice daily, carvedilol 12.5 mg twice daily, and furosemide 20 mg daily. Which of the following would be most appropriate to alleviate the cough of this patient?

A. Reduce the carvedilol dose
B. Recommend an OTC cough drug containing dextromethorphan

C. Discontinue enalapril and start candesartan

D. Discontinue enalapril and start hydralazine-nitrate combination

47. Which of the following statements is **false** regarding the white blood cell count (WBC) and differential?

A. Left shift is defined as an increase in immature neutrophils or bands

B. Leukopenia might be occurred secondary to certain medications.

C. The WBC is always elevated in response to any infection

D. The WBC differential is key to determining whether an infection is present.

48. BM is admitted to internal medicine ward and he is on 4th day of spontaneous bacterial peritonitis (SBP) treatment, and his ascitic fluid has begun to re-accumulate, but it is not painful. Which regimen is the most appropriate therapy to treat the ascites?

A. Propranolol 10 mg orally twice daily

B. Furosemide 20 mg IV every 6 hours and repeat paracentesis

C. Spironolactone 100 mg and furosemide 40 mg orally

D. Aldosterone 100 mg and furosemide 50 mg IV

49. KP is a 64-year-old woman with a history of ischemic stroke several months ago. She was previously prescribed aspirin 325 mg daily but developed an allergy to aspirin and stopped taking it 2 days ago. Which one of the following is the most appropriate recommendation at this time?

A. Make no change at this time

B. Reduce aspirin dose from 325 mg daily to 81 mg daily

C. Discontinue aspirin and begin clopidogrel 75 mg daily

D. Restart aspirin 325 mg every other day

50. Which of the following would be the most preferred antimicrobial agents in the treatment of aspiration pneumonia in a hospitalized adult patient?

A. Ceftriaxone and metronidazole

B. Gentamicin and cloxacillin

C. Ceftriaxone and cloxacillin

D. Gentamicin and erythromycin

51. EM is a 56-year-old, 60 kg Ethiopian male CKD patient with the following laboratory values: BUN 56 mg/dL and; SCr 2.8 mg/dL. What stage of CKD would you classify him? $GFR = \frac{(140-\text{age})*\text{weight}}{72*\text{erum creatinine}}$

A. Stage 2 CKD C. Stage 3 CKD

B. Stage 4 CKD D. Stage 5 CKD

52. JF is a 60-year old female patient diagnosed with hypertension. Her average BP is 145/90. She has no other comorbid conditions. In addition to changes in diet & exercise, what pharmacotherapy would be most appropriate for JF?

A. Clonidine C. Furosemide

B. Hydrochlorothiazide D. Life style modification

53. Which of the following are critical in obtaining accurate BP measurements?

A. Avoidance of caffeine or nicotine 30 minutes prior to measurement

B. Patient should be seated comfortably for at least 5 minutes, with back supported, and feet flat on the floor

C. Arm must be supported at positioned at heart level

D. All of the above

54. The preferred treatment option for a 45-year-old male presenting with a 3-month history of severe, continuous GERD symptoms is:

A. Patient-directed therapy with OTC omeprazole
B. Life style modification
C. Prescription strength proton pump inhibitor
D. Anti-reflex surgery

55. Which of the following is considered as an allergic reaction?

A. Upset stomach with ibuprofen
B. Sleepiness with diphenhydramine.
C. Rash due to penicillin
D. Pedal edema due to nifedipine

56. While counseling a patient on ART the following points should be addressed **except;**

A. All possible major side effects of individual drugs
B. The potential for resistance development
C. Early treatment initiation will limit future treatment options
D. Potential barriers and appropriate strategies of adherence to ART

57. What is the appropriate minimum duration that an individual must take ART medications before it can consider a possible regimen failure?

A. 3 months
B. 12 months
C. 6 months
D. 9 months

58. A 74-year-old female who weighs 55 kg presents with a DVT and is initiated on enoxaparin therapy. Which of the following is an acceptable warfarin initiation dose in this patient?

A. 1 mg
B. 7.5 mg
C. **5 mg**
D. 10 mg

59. C.F. is a 55-year-old man who presents to clinic with significant dyspnea on exertion and orthopnea. He has an ejection fraction of 55% and a past medical history significant for type 2 diabetes, heart failure, and hypertension. He has no known drug allergies and is receiving furosemide, metoprolol, and glibenclamide. What pharmacologic agent should be added to C.F.'s regimen to reduce morality associated with his heart failure?

A. Lisinopril
B. Nifedipine
C. Digoxin
D. Spironolactone

60. BG is a 74-year-old woman admitted to medical ward due to heart failure exacerbation. She is classified as NYHA class IV. Her blood pressure is 144/82 mm Hg and most recent EF is 26%. Her current medication regimen includes enalapril 10 mg once daily, carvedilol 25 mg twice daily, digoxin 0.125 mg once daily, and furosemide 20 mg twice daily. Which of the following would be the best choice to add at this time?

A. Hydrochlorothiazide
B. Nifidipine
C. Losartan
D. **Spironolactone**

61. RT, a 55 years old male patient, is ready to be discharged after experiencing an acute ischemic stroke 5 days ago. His past medical history is significant for hypertension. Which one of the following is the appropriate combination of medications for RT upon discharge?

A. ASA only
B. ASA, enalapril and atorvastatin
C. ASA, atorvastatin
D. Atorvastatin, enalapril

62. A 62-year-old man presents with substernal chest discomfort that usually lasts for 2 to 10 minutes that is pressure-like and radiates up to his jaw and down the left arm and is brought on by walking four blocks or by

arguments with his wife over money. Past medical history includes dyslipidemia; total cholesterol, 320 mg/dL; LDL, 252 mg/dL; triglyceride TG, 180 mg/dL; and HDL, 32 mg/dL, smoking two packs per day for 30 years, benign prostatic hypertrophy, and hypertension BP, 156/92 mm Hg. Resting electrocardiogram (ECG) is normal. His current medications list includes: Sublingual nitroglycerine, terazosin, aspirin, atorvastatin. What type of DTP this patient experienced?

A. Un-necessary drug therapy
B. Needs additional drug therapy
C. Dosage too low
D. There is no DTP

63. A patient with a gunshot wound to the abdomen, which has resulted in spillage of intestinal contents, is brought to the emergency room. Which antibiotic would you select to effectively treat an infection due to Bacteroides fragilis?

A. Amoxicillin
B. Gentamicin
C. Metronidazole
D. Azithromycin.

64. For a patient who is currently stable after a severe upper GI bleed associated with long term NSAID use, and found to be H. pylori positive. What is the most effective management strategy for this patient?

A. Stop NSAIDS, eradicate H. pylori with antibiotics and $H_2$-blocker full dose or daily PPI maintenance therapy
B. Stop NSAIDs, full dose $H_2$-blocker or daily PPI maintenance therapy
C. Eradicate H. pylori with antibiotics, full dose $H_2$RA or daily PPI maintenance therapy
D. Continue high-dose proton pump inhibitor therapy

65. Among which type of TB patients the use of steroids for 11 weeks has shown to be beneficial and should be considered as the treatment regimen?

A. Pulmonary TB
B. TB pleurisy
C. TB lymphadenitis
D. TB meningitis

66. Which one of the following drugs should be avoided in the management of acute decompensated heart failure?

A. Loop diuretics
B. β-blockers
C. Digoxin
D. $\beta_1$-agonists

67. A 25 years female patent was admitted with the assessment of stage III CHF (LVEF=60%) precipitated by atrial fibrillation otherwise there is no any other comorbidity. Which of the drug is less beneficial for the patient at this time?

A. Loop diuretic
B. Warfarin
C. Digoxin
D. Hydrochlorothiazide

68. JK was taking vancomycin 1g IV BID, ceftriaxone 1g IV BID, enalapril 10 mg PO daily, spironolactone 25 mg PO daily, and furosemide 60 mg IV TID. The renal function test revealed that Scr = 3 mg/dL and BUN = 65 mg/dL. Otherwise, CBC, electrolyte and Liver function tests are normal. Which one of the following two drugs can be continued without dose reduction or discontinuation at this time?

A. Vancomycin and ceftriaxone
B. Furosemide and enalapril
C. Ceftriaxone and furosemide
D. Enalapril and spironolactone

69. Which of the following opportunistic infections appears at the lowest CD4 count among patients infected with HIV?

A. TB
B. Toxoplasmosis
C. PCP
D. Cytomegalovirus

70. A 52-year-old woman received a diagnosis today of type 2 DM. Her A1C is 7.8%, and her FBG is 186 mg/dL. She has no other chronic disease states or history of cardiovascular disease. According to the current ADA guidelines, which would be considered the best initial treatment of choice for this patient?

A. Implement changes in lifestyle (diet and exercise)
B. Implement changes in lifestyle plus metformin 500 mg once daily
C. Implement changes in lifestyle plus sitagliptin 100 mg once daily
D. Implement changes in lifestyle plus insulin glargine 10 units once daily

71. The only calcium channel blocker with approved application in the prophylaxis of neurologic injury following rupture of an intracranial aneurysm (subarachnoid hemorrhage):

A. Amlodipine
B. Nifedipine
C. Nimodipine
D. Verapamil

72. A mainstay of therapy for virtually all forms of shock is:

A. Intravenous fluids
B. Phenylephrine
C. Epinephrine.
D. Red blood cells

73. HD is a 48-year old man (70kg) admitted after acute myocardial infarction. He became anuric within 24 hrs with the following information.

PMH: DM, HTN, Tobacco use

MEDS: metformin, amlodipine, nicotine patch, naproxen.

Labs: Scr 1.0 on admission, increase to 2.1 in 24 hrs (BUN 20 mg/dl). Urine muddy casts.

Vitals: BP 120/80

*Which of the following medications is best to discontinue at this time?*

A. Amlodipine only
B. Metformin and amlodipine
C. Naproxen only
D. Metformin and naproxen

74. Of the following statements one is **wrong** about stroke
   A. Alterations in serum glucose are common
   B. Intravenous labetalol is generally the drug of choice
   C. Rapid reduction of BP to <140/90 is recommended
   D. Fever is associated with unfavorable outcomes

75. The basic principles of emergency management of severe asthma exacerbations in adults include all **except**.
   A. Assess the severity of the attack
   B. Use inhaled short-acting beta agonists early and frequently
   C. Start systemic glucocorticoids if there is no an immediate and marked response to the inhaled short-acting beta agonists
   D. Oral glucocorticoids are the initial treatment regimen

76. Identify the **wrong** statement about neonatal sepsis
   A. Sepsis is an important cause of morbidity and mortality among newborn infant
   B. The combination of ampicillin and gentamicin is preferred empiric therapy
   C. The primary intervention to prevent neonatal sepsis is the use of intrapartum antibiotic prophylaxis (IAP) in mothers with documented group B streptococcal (GBS) colonization
   D. The maximum duration of treatment is 5 days

77. WT is a 58-year-old patient diagnosed with community-acquired pneumonia and sepsis. WT has received initial fluid resuscitation (10 minutes ago) and has ordered for ceftriaxone and azithromycin. What should be ordered and completed prior to initiation of antibiotics (if possible)?

A. Initiate stress ulcer prophylaxis
B. Draw blood for culture and sensitivity test
C. Initiate hydrocortisone
D. Initiate vasopressin

78. Select the monitoring parameter for patients receiving fluid resuscitation

A. Glucose
B. Serum cortisol level
C. Complete blood count with differential
D. Urine output

79. Which of the following is **correct** about diabetic ketoacidosis (DKA) management?

A. Insulin therapy should be started first followed by fluid replacement
B. Fluid replacement therapy should be initiated before insulin therapy
C. Empiric antibiotic therapy should be initiated immediately
D. NPH is recommended for DKA patients as initial therapy

80. Which one of the following emergency drugs does **not** have ceiling dose (maximum dose)?

A. Furosemide
B. Adrenaline
C. Regular insulin
D. Salbutamol

81. Which of the following situation does **not** alter patient's insulin requirements among diabetic patients?

A. Pregnancy
B. Major surgery
C. Use of proton pump inhibitors
D. Presence of severe infection

82. In general risk of drug induced birth defect is higher during:

A. First trimester
B. Third trimester
C. Second trimester
D. The same in all stages

83. Which one of the following during is **not** contra indicated during pregnancy?

A. Methotrexate
B. Lithium
C. Folic acid
D. Cyclophosphamide

84. which one of drugs/substances should be avoided during lactation because of high concentration in breast milk

A. Insulin
B. Heparin
C. Warfarin
D. Alcohol

85. All of the following can be considered in the management of hepatic encephalitis **except**:

A. Metronidazole
B. Ceftriaxone
C. Neomycin
D. Lactulose

86. All of the following are recommended in the treatment of constipation **except**:

A. Dietary modification (increases meal with high fiber content)
B. Change in other aspects of lifestyles regular physical exercise
C. Decrease fluid intake
D. Pharmacologic therapy like bisacodyl

87. Which of the following is the safest laxative and used for treatment of constipation, particularly in children?

A. Glycerin
C. Bisacodyl
B. Lactulose
D. Castor oil

88. Which of the following drugs have short half-life and used only in mild type of GERD?

A. Anti-acids
C. Proton pimp inhibitors
B. $H_2$ blockers
D. All of the above

89. TM is a 60-year-old woman with a CrCl of 25 mL/min. She is beginning to notice some ankle swelling, and her physician diagnoses edema secondary to chronic renal insufficiency. The most appropriate therapy for this patient at this time would be

A. Dialysis
C. Loop diuretics
B. Thiazide diuretics
D. Potassium sparing diuretics

90. Which one of the following diuretics is the most effective and safe in patient with acute renal diseases?

A. Loop diuretics
C. Thiazide diuretics
B. Potassium sparing diuretics
D. All are equally effective

91. Which of the following **cannot** be treatment option in hyperkalaemia?

A. Calcium gluconate
C. Insulin/glucose
B. Metoprolol
D. Albuterol

92. A 45 years old man diagnosed with chronic kidney disease and type II diabetes mellitus. Which of the following medication is less effective for this patient?

A. Enalapril
C. Lisinopril
B. Atenolol
D. Candesartan

93. Which one of the following antifungal medication has the highest risk of drug induced renal toxicity?

A. Ketoconazole
B. Fluconazole
C. Amphotericin
D. Itraconazole

94. Which of the following is **not** healthy lifestyle?

A. Avoid smoking
B. Moderate to vigorous activity >30 min/day
C. Body mass index >30 kg/m$^2$
D. Healthy diet score.

95. Which of the following is the antihypertensive choice of medication for pregnant mother?

A. Enalapril
B. Methyldopa
C. Lisinapril
D. Candesartan

96. Which groups of antihypertensive medications are generally considered as second line and used for patients having benign prostate hyperplasia (PBH)?

A. β-blockers
B. $\alpha_1$-blockers
C. ACEIs
D. Diuretics

97. Which one of the following medication don't have mortality benefit but used as symptomatic treatment and decrease hospitalization among heart failure patients?

A. ACEIs
B. Potassium sparing diuretics
C. Digoxin
D. $\alpha_1$-blockers

98. Which of the following is the long-term goals following myocardial infarction?

A. Prevent the development of systolic heart failure
B. Prevent recurrent MI and stroke
C. Prevent death, including sudden cardiac death
D. All are correct.

99. Which of the following medications are generally contraindicated or should be used with cautions for asthmatic patients?

A. Enalapril
B. Amlodipine
C. Digoxin
D. Propranolol

100. A 40 years old male patient was on warfarin therapy for DVT prophylaxis after left knee amputation. The patient took very high dose of warfarin mistakenly starts to have bruise in his hands indicating risk of bleeding. Which one of the following should be used as anti-dot for this patient?

A. Protamine sulphate
B. Aspirin
C. Heparin
D. Vitamin K

101. A 52-year-old man has a past history of chronic stable angina & hypertension. He is experiencing chest pain twice weekly while being treated with atenolol 100 mg daily. His BP is 146/90 mm Hg (144/92 mm Hg when repeated), & his HR is 58 beats/minute. Which of the following is the most appropriate agent to be added in this patient?

A. Nifedipine SR 30 mg daily
B. Enalapril 20 mg daily
C. HCT 12.5 mg daily
D. Losartan 150 mg daily

102. Which adverse effects of lisinopril can be avoided by switching to candesartan?

A. Cough
B. Hypotension
C. Hyperkalemia
D. Renal failure

103. Which of the following therapies are shown to reduce risk of stroke following MI?

A. Warfarin
B. Aspirin
C. Simvastatin
D. All of the above

104. Which one of the following antipsychotic medications is associated with high risk of extrapyramidal side effects?

A. Clozapine
B. Haloperidol
C. Olanzapine
D. Quetiapine

105. All of the following side effects of most antipsychotic and anti-depressant medications are reasons for poor adherence among the patients **except:**

A. Weight loss
B. Sedation
C. weight gain
D. Sexual dysfunction

106. Which of the following drug adverse effects including severe peripheral ischemia manifested as cold, numbness, painful extremities, diminished peripheral pulses and claudication?

A. β- blockers
B. CCBs
C. Ergot alkaloids
D. Antidepressants

107. Musculoskeletal (bone related) pain can be best treated with which of the following medications?

A. NSAIDs
B. Anticonvulsants
C. Opioid analgesic
D. Antidepressants

108. Which of the following drug is potent CYP enzyme inducer including its own metabolism (auto inducer), hence it requires dose optimization after 2 weeks?

A. Phenytoin
B. Valproic acid
C. Carbamazepine
D. Venlafaxine

109. Which drug is effective to blunt the peripheral autonomic symptoms of arousal (rapid HR, sweating and tremor) in performance-related anxiety?

A. Non selective β-Blockers
B. SSRIs
C. TCAs
D. Anticonvulsants

110. A 32 years old male client comes to your pharmacy complaining insomnia. Which is **not** recommended to manage the patient's problem?

A. Often have a day time naps
B. Go to bed only when you feel sleepy
C. Relaxation exercise like yoga
D. Create comfortable sleep environment

111. Which of the following drug is **not** recommended in the management of manic phase of bipolar disorder?

A. Lithium
B. Fluoxetine
C. Valproic acid
D. Quetiapine

112. H. M was 26 years old male patients who is diagnosed with major depressive disorder with a comorbidity of migraine. Which one of the following is appropriate drug selection for HM?

A. Amitriptyline
B. Bupropion
C. Fluoxetine
D. Sertraline

113. Which of the following is **not** recommended practice while a patient is seizing (during active seizure)?

A. Hold the patient not to seize

B. Remove any dangerous obstacles around the patient

C. Loosen tight closing like tie and collars

D. Turn the person on his side

114. Which one of the following is not the side effect of insulin?

A. Hypoglycemia

B. Weight gain

C. GI irritation

D. Injection site atrophy

115. Which one of the following is an acute complication of diabetes mellitus and it needs an emergency management?

A. Coronary artery disease

B. Peripheral vascular disease

C. Diabetic ketoacidosis

D. Cerebrovascular disease

116. A 27-year-old woman presents with symptoms of diarrhea, racing heart, weight loss despite increased appetite, and heat intolerance. Her laboratory tests are consistent with moderate hyperthyroidism. Which of the following would be appropriate initial treatment?

A. Propranolol alone

B. Levothyroxine

C. Propylthiouracil

D. Surgery

117. Which of the following measures does **not** help to prevent diabetes complications among diabetic patients on medication?

A. Controlling blood glucose

B. Controlling blood pressure and lipids profile

C. Eliminating all carbohydrates from the diet

D. Prompt detection of diabetic eye and kidney disease

118. Which of the following oral anti-diabetic drug is more likely associated with hypoglycemia and patients should be informed on the possible episodes of hypoglycemia?

A. Metformin
B. Sulfonylureas
C. Thiazolidinediones
D. Dipeptidyl peptidase inhibitors

119. All of the following are common clinical presentation of diabetes mellitus **except**:

A. Dysuria
B. Polydipsia
C. Polyphagia
D. Unexplained weight loss

120. Which one of the following is the most appropriate therapy for all type I diabetic patients irrespective of its severity?

A. Glyburide
B. Insulin
C. Metformin
D. Pioglitazone

121. Among the β- adrenergic blockers which one of the following is drug of choice for hyperthyroidism to blunt the autonomic over activities?

A. Metoprolol
B. Propranolol
C. Atenolol
D. Carvedilol

122. Which of the following is a **not** possible complication of Cushing syndrome?

A. Hypotension
B. Abnormal psychiatric manifestation
C. Hyperglycemia
D. Central obesity

123. The use of dexamethasone among patients diagnosed with meningitis is primarily indicated for:

A. Prevent CNS sequel due to inflammation
B. Possible increase in drug penetration into the CNS
C. Has anti-bacterial activity

D. Prevent transmission to other individuals

124. Which of the following is the most common cause of bronchiolitis?

A. Respiratory syncytial virus
C. Parainfluenza virus
B. Mycoplasma
D. Adenovirus

125. Which of the following would be the most appropriate therapy for the treatment of mycoplasma pneumonia in a patient with history of poor medication adherence behaviour?

A. Erythromycin
C. Azithromycin
B. Clindamycin
D. Amoxicillin

126. Which of the following would be the most appropriate choice as empiric therapy for hospital-acquired pneumonia?

A. Amoxicillin
C. Clindamycin
B. Piperacillin/tazobactam
D. Erythromycin

127. Which of the following would be identified as a disadvantage of combination antimicrobial therapy?

A. Prevent the emergence of resistance
B. Broaden the coverage of antimicrobial therapy
C. Risk of drug toxicity
D. Achieve synergy against the infecting pathogen

128. Which of the following statement is **true** regarding antibiotic therapy?

A. Cloxacillin is broad spectrum antibiotics acting against gram positive and negative bacteria
B. Tetracyclines are bacteriostatic antibiotics
C. Metronidazole is more active against gram-negative aerobic bacteria
D. All 3rd generation cephalosporins are effective against P. aeruginosa

129. Which one of the following is **correct** about the desirable characteristics of antimicrobial therapy in acute bacterial meningitis?

A. Low-dose and hydrophilic antibiotics
B. High-dose and hydrophilic antibiotics
C. Low-dose and lipophilic antibiotics
D. High-dose and lipophilic antibiotics

130. Standard empiric therapy for 25-year old patients presenting with signs and symptoms consistent with bacterial meningitis would most appropriately include:

A. Ceftriaxone and vancomycin
B. Linezolid and ampicillin
C. Ceftriaxone and ampicillin
D. Ampicillin alone

131. Which of the following would be most appropriate for the empiric treatment of pneumonia, where P. aeruginosa is a possible pathogen?

A. Azithromycin plus doxycycline
B. Cefotaxime plus clindamycin
C. Amoxicillin/clavulanate plus levofloxacin
D. Piperacillin/tazobactam with/without ciprofloxacin

132. In which of the following patients would a urinary tract infection be considered an uncomplicated infection?

A. A-25-year female patient with UTI, otherwise healthy
B. A-40-year male patient with UTI and kidney stones
C. A-65-year female patient with UTI, otherwise healthy
D. A-2-year female baby with UTI and history of vesicoureteral reflux

133. The organism that most commonly causes community-acquired urinary tract infections is?

A. P. aeruginosa C. E. coli

B. Proteus spp. D. S. saprophyticus

134. Which of the following regimens would be the most appropriate treatment for a seriously ill patient with acute pyelonephritis?

A. Cotrimoxazole double strength, 1 tablet po BID for 3 days

B. Ciprofloxacin 500mg po BID for 3 days

C. Levofloxacin 500mg po, 1 dose

D. Ciprofloxacin 500mg po BID for 10 days

135. Which one of the following is the most hepatotoxic anti TB drug?

A. Isoniazid C. Pyrazinamide

B. Ethambutol D. Rrifampin

136. All of the following are major risk factors for MDR-TB includes **except**:

A. Cavitary pulmonary TB with high bacterial load

B. Inadequate treatment

C. Non-adherence

D. Transmission from patients with drug susceptible TB

137. Penetrating abdominal trauma resulting from acute bacterial secondary peritonitis can be best treated with which oral antimicrobial therapy?

A. Ciprofloxacin plus metronidazole

B. Ciprofloxacin

C. Levofloxacin plus amoxicillin-clavulanate

D. Moxifloxacin

138. Which one of the following is common and severe side effect expected from combing aminoglycoside with vancomycin during the management of endocarditis?

A. Hepatotoxicity
B. Cardiotoxicity
C. Neurotoxicity
D. Nephrotoxicity

139. Which one of the following is the preferred first-line drug for a patient infected with Salmonella typhi?

A. Ceftriaxone
B. Erythromycin
C. Ciprofloxacin
D. Metronidazole

140. RG, a 25-year-old pregnant woman, comes to the clinic complaining of vaginal itching. Upon examination, the practitioner notes a non-odorous discharge. Which of the following should be treatment of choice for RG?

A. Amphotericin B for 2 weeks
B. Oral fluconazole for 2 weeks
C. Miconazole cream for 2 weeks
D. Terbinafine 250 mg po for 2 months

141. Which of the following is risk factor for invasive fungal infections?

A. Use of broad-spectrum antibiotics
B. HIV/AIDS patient
C. Use of immunosuppressant drugs
D. All of the above

142. Which of the following is the recommend regimen for a patient newly diagnosed culture-positive pulmonary TB?

A. RHZE daily × 2 months, followed by RH× 4 months
B. RHZE daily × 2 months, followed by RH × 2 months
C. RHZE daily × 2 months, followed by HE × 4 months
D. RHZE daily × 4 months, followed by RH × 2 months

143. Patients at risk for Pneumocystis jiroveci pneumonia infections should receive prophylaxis with:

A. Ciprofloxacin
B. Acyclovir
C. Trimethoprim/sulfamethoxazole
D. Fluconazole

144. The drug of choice for ascariasis among adult individuals is:

A. Albendazole 100 mg once daily for 3 days
B. Mebendazole 100 mg twice daily for 3 days
C. Ivermectin 200 mg/kg/day for 2 days
D. Diethylcarbamazine 6 mg/kg/day for 5 days

145. Which one of the following antibiotics **cannot** be used for surgical prophylaxis in Ethiopian practice?

A. Cefazolin
B. Ceftriaxone
C. Piperacillin/tazobactam
D. Metronidazole

146. Which one of the following anticonvulsant is the least preferred and should be avoided if possible during pregnancy?

A. Phenytoin
B. Sodium valproate
C. Lamotrigine
D. Carbamazepine

147. Which of the following is the most feared and series side effect of *anthracyline* anti-cancer drugs?

A. Constipation
B. Renal toxicity
C. Cardiotoxicity
D. Hyperglycaemia

148. What is the role of leucovorin in anticancer regimen containing (leucovorin + methotrexate + 5-FU)

A. To decrease myelosuppressive side effect of 5-FU.
B. To increase the response rate of 5-FU
C. To decrease or counteract toxicity of methotrexate.
D. It is anticancer drug.

149. Which one of the following is the most common risk factor for lung cancer?

A. Ionizing radiation
C. Viral infection
B. Cigarette smoking
D. use of anticancer dugs

150. If there is a decrease in the size of the prostate on digital rectal exam in a patient who received treatment for prostate cancer, it is called:

A. Cure
C. Complete Response
B. Partial response
D. Progressive

151. Which of the following is true regarding the characteristic of cancers?

A. Cancer is unregulated cell growth with invasion of nearby tissues
B. Cancers of epithelial tissues are called carcinomas
C. Malignant tumor is fast growing and poorly differentiated
D. All of the above are true

152. A stage II breast cancer patient is planned to get chemotherapy followed by mastectomy. This type of chemotherapy is called:

A. Induction
C. Consolidation
B. Adjuvant
D. Neoadjuvant

153. Which of the following are **true** about the design of chemotherapy regimens?

A. They are always designed with a cure in mind.
B. Using drugs with the same mechanism of action is better than targeting multiple targets
C. Combination therapy is the standard of care for most types of cancer.
D. Because of they are safe; they are given for long time continuously

154. A patient recently had surgery to remove a diagnosed breast cancer. It had invaded her lymph nodes, but her surgeon is confident he removed totally.

Treatment given to decrease the chance of recurrence, even though there is no trace of cancer left is known as:

A. Primary treatment
B. Neoadjuvant treatment
C. Adjuvant treatment
D. Palliative chemotherapy

155. Which one of the following drug is categorized as highly emetogenic anticancer drug?

A. High dose of cyclophosphamide
B. Paclitaxel
C. Dexamethasone
D. Bleomycin

156. What is the purpose of giving of neoadjuvant in the treatment of cancer patients?

A. To remove the micro metastasis after surgery
B. To remove the micro metastasis before surgery
C. To shrink the size of the tumor and enables to be respectable before surgery
D. To completely remove the cancerous cell and to cure

157. Which one of the following cancer can be effectively prevented screening with Pap smear?

A. Cervical cancer
B. Lung cancer
C. Breast cancer
D. Head and neck cancer

158. Which of the following drug is used to prevent severe nausea and vomiting induced bay highly ematogenic drugs during chemo therapy?

A. Metoclopramide
B. Chlorpromazine
C. Ondansetrone
D. Prednisilone

159. Hemorrhagic cystitis due to cyclophosphamide can be prevented by administration of:

A. Leucovorin
B. MESNA
C. Folic acid
D. Dexamethasone

160. Hand-foot syndrome is commonly associated with which anti-cancer drug?

A. 5 FU
B. Methotrexate
C. Carboplatin
D. Paclitaxel

161. Nephrotoxicity is common and dose limiting toxicity of which anticancer drug?

A. Oxaliplatin
B. Cisplatin
C. Vincristine
D. Paclitaxel

162. Most of anticancer drugs cause myelosuppression. Which of the following is the most common, severe and acute problem of myelosuppression?

A. Anaemia
B. Thrombocytopenia
C. Neutropenia
D. Thrombocytosis

163. Choose the type of cancer which is leading cause of death among men:

A. Prostate cancer
B. Breast cancer
C. Cervical cancer
D. Lung cancer

164. Which of the following cancer has relatively low tendency to metastasis and long survival rate?

A. Lung cancer
B. Breast cancer
C. Head and neck cancer
D. Cancer of pancreas

165. Which one of the following is the most appropriate treatment option for intermittent asthma?

A. Long acting beta agonists
B. Cromolyn
C. Short acting beta agonists
D. Corticosteroids

166. Which one of the following is **not** possible adverse effect of $\beta_2$-agonists like salbutamol and salmeterol during the treatment of asthma?

A. Bradycardia
B. Tremor
C. Hypokalemia
D. Palpitation

167. Which one of the following medication has narrow therapeutic window and should be used with caution in the management of asthma?

A. $\beta_2$-Agonists
B. Theophylline
C. Anticholinergic
D. Ccorticosteroids

168. LD was a 35 years old male patient presented with productive cough for one week with absence of any other symptoms of infection (no fever, no night sweet, no shortness of breath but the cough is bothersome). Which one of the following is the most appropriate management option for LD?

A. Acetyl cysteine
B. Amoxicillin
C. Salbutamol
D. Cetirizine

169. Which one of the following can decrease uric acid production but it is **not** effective in acute gouty arthritis?

A. Colchicine
B. Allopurinol
C. NSAIDs
D. Probenecid

170. Allopurinol is **not** the anti-hyperuricemic drug of choice in patients with:

A. A history of urinary stones
B. C. Overproducers of uric acid
C. Impaired renal function
D. Under-excretors of uric acid

171. Of first-line DMARDs, which one has been shown to be superior in efficacy by different studies and hence most commonly being prescribed currently?

A. Methotrexate
B. Sulfasalazine
C. Hydroxychloroquine
D. Leflunomide

172. Which of the following non-pharmacological measures is **not** recommended for acute gout attack?

A. Mobilization of joint
B. Abstinence of alcohol
C. Ice packs
D. Dietary modification

173. Which of the following drugs used in management of osteoporosis has longest biologic half-life?

A. Alendronate
B. Calcium supplements
C. Raloxifene
D. Vitamin D

174. All of the following can be adverse effects of long term systemic steroid use except:

A. Osteoporosis
B. Cushing syndrome
C. Hypertension
D. Weight loss

175. FM is 58 years old woman diagnosed with osteoporosis with mild symptoms and no any significant bone problem is happened so far. All of the following intervention can decrease the disease progression and improve the symptoms of FM **except**:

A. Depot medroxyprogesterone acetate
B. Vitamin D supplementation
C. Calcitonin
D. Tamoxifen

176. Which one of the following is the most potent corticosteroid among the given alternatives?

A. Dexamethasone
B. Methyl prednisolone
C. Prednisone
D. Hydrocortisone

177. Which one of the following is the first line symptomatic treatment for non-productive cough?

A. Acetyl cysteine
B. Dextromethorphan
C. Amoxicillin
D. Guaifenesin

178. LR is a 58 years old man with past medical history of persistent asthma which is controlled with inhalational fluticasone + salmeterol. Last week he was diagnosed with myocardial infarction that requires antiplatelet and β-blockers. Which one of the following is **not** appropriate medication selection for LR?

A. Propranolol should be avoided for this patient
B. Metoprolol can be used due to the benefit outweighs the risk
C. Aspirin is safer antiplatelet agent than clopidogrel for this patient.
D. Bisoprolol can be used among the b- blockers

179. For majority of asthmatic patients which one of the following intervention will have the least importance in the management of the disease?

A. Instructing the appropriate use of inhalational devices
B. Regular physical exercise
C. Identification and avoidance of any triggering factors
D. Patient education regarding medication adherence

180. Which one of the following is used for treatment of megaloblastic anaemia?

A. Cyanocobalamin 1mg /day
B. Ferrous sulphate 325mg TID
C. Folic acid 5 mg /day
D. A and C

181. Which one is **not** the consequence of poor medication adherence among patients ?

A. Substantial worsening of the underlying disease
B. Death from the underlying disease and/ or its complications
C. Decrease health care costs.
D. Development of drug resistance and therapeutic failure

182. Which one of the following is a major cause of adverse drug reactions among elderly patients?

A. Polypharmacy
B. Female gender
C. Drug-drug interactions
D. Expensive medications

183. Which of the following pharmacokinetic parameters has the most important and consistent age-related changes that can affect medication prescribing?

A. Gastrointestinal absorption
B. Renal excretion
C. Hepatic metabolism
D. Distribution

184. A patient was taking furosemide 20 mg IV bid for the treatment of CHF. When the patient was discharged from the hospital switching IV route to per oral (PO) was considered. What should be the appropriate PO conversion dose if bioavailability of furosemide is 50 %?

A. 40 mg PO bid
B. 10 mg PO bid
C. 20 mg PO bid
D. 20 mg PO tid

mother having an infant of 2 month brought her child to you looking help. When you examine the child, his skin was gray- blue (cyanosis), emic, irregular respiration, hypothermia and the color of his stool anged. The mother said that this all happed after she gave an unknown ug without consulting a health professional. What do you guess the most kely drug the child was taking?

A. Tetracycline
B. Rifampicin
C. Chloramphenicol
D. Streptomycin

An antibiotic which can be used in the management of acne vulgaris

A. Amoxicillin
B. Gentamycin
C. Tetracycline
D. Isoniazid

“A lot of water should be taken during treatment”. This advice is given or

A. Cotrimoxazole
B. Mebendazole
C. Metronidazole
D. Amoxicillin

“Chew before swallowing”. This advice is given for one of the following drug

A. Metronidazole capsule
B. Paracetamol tablet
C. Niclosamide tablet
D. Praziquantel tablet

A patient presents to the emergency department with an extreme headache. After a thorough workup, the attending physician concludes that the pain is due to increased intracranial pressure. Which diuretic would work best to reduce this pressure?

A. Acetazolamide
B. Mannitol
B. Furosemide
D. HCT

190. A 55-year-old male with kidney stones has been placed on a diuretic to decrease calcium excretion. However, after a few weeks, he develops an attack of gout. Which diuretic was he taking?

A. Furosemide. C. HCT

B. Spironolactone D. Triamterene

191. A 45-year-old man was just started on therapy for hypertension and developed a persistent, dry cough. Which is most likely responsible for this side effect?

A. Enalapril. C. Losarten.

B. Nifedipine. D. Prazosin.

192. One of the following measurements of adherence technique differs from the other

A. Self-reports

B. Pill counts

C. Pharmacy refill records

D. Detection of drugs metabolites in plasma

193. Which one of the following statements is False?

A. When drops and ointment are used, use the drops first then wait 5 minutes before applying the eye ointment.

B. When two drops are used and if one drop causes stinging it should be used first.

C. It is better to use drops during the day and then use eye ointment in the evening

D. If the patient is using two types of eye ointment, apply the first, and then wait 10 minutes before applying the second

194. One of the following actions is good when asthmatic patient inhales salbutamol

A. Breathe out after pressing his inhaler and Inhale rapidly
B. Do not breathe in through his nose, but in his mouth
C. Press down on his inhaler at the end of inhalation (or within the first second of inhalation)
D. Press his inhaler several times while he is inhaling

195. Which of the following found on labeling but not on the prescription paper?

A. Drug name
B. Expiry date
C. Patient name
D. Drug dose and formulation

196. All of the following are **true** about inhalers **except**

A. While patient is breathing, advice to breath in mouth not nose
B. Use bronchodilator inhaler before corticosteroid inhaler
C. Use MDI with mask for older children
D. The incidence of systemic side effect is reduced

197. All of the following are true except

A. Using triplicate prescription reduce prescription forgeries
B. Prescription for narcotics should be stored for 2 years
C. Psychotropic drugs should be stored separately under lock & key
D. Separate damage products from usable stock

198. Which of the following is a mal practice when administering eye drop and eye ointment?

A. Cool eye ointment to detect the drop enter to the eye
B. Warm eye drops to increase the flow
C. Long acting eye drops is used before short acting eye drops
D. A stinging eye drop should be used before a non-stinging eye drop

199. To measure 15 mL of cough syrup a ______ should be used

A. 5 mL syringe, used thrice

B. 10 mL graduated cylinder used twice

C. 20 mL graduated cylinder

D. 50 mL graduated cylinder

200. In FEFO stock rotation

A. A drug with earlier arrival is to be dispended first

B. A drug with higher efficacy is to be dispended first

C. A drug with near expiry to be dispensed first

D. A drug with better economic value is to be dispensed first

201. Not true about suppositories and pessaries

A. It is better to use pessaries and suppositories at night time

B. Use middle finger to insert pessaries and index finger for suppositories

C. When inserting pessaries for a pregnant woman use finger method

D. None of the above

202. Which of the following is **not** true?

A. Discard eye drop one month after opening

B. When instilling ear drop for a 2-year old baby, pull the ear back ward and down ward

C. Blink the eyelid after administration of eye ointment

D. Opening many stock containers at the same time will reduce time waste

203. A drug label says to store the drug at the refrigerator, the drug should be stored

A. -15 $^{0}$C **C. 0-8 $^{0}$C**

B. 8-15 $^{0}$C D. <30 $^{0}$c

204. Which one of the following is **not** true?

A. When administering oral solution to a child lie a child on a flat surface

B. Use cotton wool to remove excess ear wax

C. The most comfortable position to apply ear drop is lying down

D. Before instilling eye drop clean the eye with cotton wool to remove any discharge

205. Currently one of the following practices is **not** the scope of pharmacists in Ethiopia

A. Quality control of drug and medical advice

B. Promotion of drugs and medical advice

C. Veterinary drug dispensing

D. Drug information service

206. All prescription containing the following drug should be kept for at least 5 years **except**

A. Morphine C. Oxycodone

B. Diazepam D. Imipenem

207. Which one of the following is true in dispensing of drug for inpatient?

A. In bulk ward stock order, the pharmacy charge to patient is facilitated

B. Individual drug order is the preferred system from a patient care perspective

C. Bulk ward systems are used in life threatening emergency situation

D. In bulk ward system there is a possibility of low error

208. Your order is for erythromycin suspension 0.75 g po qid. You have a solution in stock which is 250 mg/5 ml. What amount is the patient will take for each dose?

A. 5 mL C. 10 mL
B. 15 mL D. 20 mL

209. A drug label says to store the drug between 15 and 25 degrees centigrade. The drug should be stored

A. In a warm room B. On the pharmacy shelf
B. In the refrigerator D. In a cool room

210. A prescription containing of chlordiazepoxide should be kept in the pharmacy for at least

A. 2 years C. 4 years
B. 3 years D. 5 years

211. You have 5 g of sodium chloride. How much normal saline can you make?

A. 277.8 mL C. 555.56 mL
B. 1111.1 mL D. 2222.2 mL

212. Which of the following is **not** secondary non adherence?

A. A patient stops taking a medication due to the side effect of the medication
B. A patient on ART is not able to take his medication as he is with his friends
C. A patient has forgotten to take his medication as he was busy
D. A patient was not able to take her pills as the pills were not in the market

213. How much of a 15% w/v solution would be required to prepare 100 mL of a 0.03% w/v solution?

A. 0.02 mL
B. 0.2 mL
C. 0.1 mL
D. 0.25 mL

214. How many mL of potable water are required to dissolve 7 g of a solid, which is soluble 1 in 2.5 parts of water?

A. 1.5 mL
B. 10.5 mL
C. 17.5 mL
D. 15 mL

215. Suppose that Abraham is 42 years patient came to TASH with an assessment of UTI and typhoid fever, then the physician prescribed ciprofloxacin 500mg po bid for 7 days and norfloxacin 400mg po bid for 7 days. Finally, you are asked to identify types of DTP in the above prescription paper hence what DTP do you identify?

A. Needs additional drug therapy
B. C. Non compliance
C. Dose too low
D. Unnecessary drug therapy

216. Flumazenil is an antidote for:

A. Diazepam
B. Morphine
C. Phenobarbitone
D. Amitriptyline

217. A 33-year old woman ingested 15-20 grams of an analgesic known to become metabolized to a toxic quinone amine. A few hours after ingestion she presented to the Emergency Department with signs of nausea, vomiting & generalized malaise. A day later she developed right upper quadrant abdominal pain with elevated plasma AST & ALT levels. The

specific antidote that should be used to treat this patient in order to prevent liver failure is:

A. Acetaminophen

B. Aspirin

C. Amyl nitrate

D. N-acetylcysteine

218. A 39-year-old carpenter has taken two bottles of liquor from the local shop. After about an hour, he develops confusion, vomiting and blurring of vision. He has been brought to the emergency department. He should be given;

A. Naloxone

B. Flumazenil

C. Diazepam

D. Ethyl alcohol

219. A 48-year-old hypertensive patient has been successfully treated with a thiazide diuretic for the last 5 years. Over the last 3 months, his diastolic pressure has steadily increased, and he was started on an additional antihypertensive agent. He complains of several instances of being unable to achieve an erection and not being able to complete three sets of tennis as he once did. Which is the likely second antihypertensive medication?

A. Captopril.

B. Metoprolol.

C. Losartan.

D. Minoxidil

220. A 75-year-old woman with hypertension is being treated with a thiazide. Her blood pressure responds well and reads at 120/76 mm Hg. After several months on the medication, she complains of being tired and weak. An analysis of the blood indicates low values for which of the following?

A. Calcium.

B. Potassium

B. Glucose

D. Sodium.

221. An 87-year-old woman who is taking multiple medications for her "heart disease" is prescribed gentamicin for diverticulitis. After a few days of

taking the antibiotic, she complains of dizziness and tinnitus. What ''heart medication'' might she be on?

A. Spironolactone
B. HCT
C. Mannitol
D. Ethacrynic acid

222. Suppose that Bewuketu is 50 yrs old man diagnosed with arthritis and peptic ulcer diseases, and then clinical pharmacist wants to give drug for his arthritis that cannot exacerbate his PUD. If so what will be best among the following NSAIDs.

A. Aspirin
B. Meloxicam
C. Ibuprofen
D. Indomethacin

223. Abdi is HIV/AIDS patient came to Tikur Anbessa Specialized Hospital for the compliant of joint swelling, pain and inflammation. The physician finally confirmed that Abdi has also arthritis. Which of the following class of drug should not be given for prolonged time for Abdi who is RVI patient?

A. Diclofenac
B. Meloxicam
C. Corticosteroids
D. Indomethacin

224. Solomon is known rheumatoid arthritis patient for the last one year and unknown drug was given for him for the treatment of his arthritis. He finally developed hypertension, hyperkalemia, hepatotoxicity, gingival hyperplasia, and hirsutism. Then what was the probable drug that Solomon was taking?

A. Methotrexate
B. Cyclophosphamide
C. Cyclosporine
D. Azathioprine

225. The daily required volume of F-75 therapeutic feed for 5 years old children diagnosed with sever acute malnutrition in phase-I is approximately:

A. 75 mL/kg
C. 130 mL/kg
B. 100 mL/kg
D. 180 mL/kg

226. Most recent and in-depth information about a health-related topic is

A. Primary
C. Secondary
B. Tertiary
D. Quaternary

227. Which one is a good criterion of topic for drug information consult writing guide:

A. Topic of DI consult should be prepared in the form of statement rather than question form
B. Topic of DI consult needs to be minimum of two sentence long
C. Topic of DI consult must include the disease state for which the drug is being used
D. Topic of DI consult should state only medication & appear at the bottom of consult paper

228. Among the following, one is **incorrect** about reference sources to prepare DI consult

A. DI specialist need to use at a minimum of four sources from the primary literature and the tertiary literature.
B. It is logical to use Tertiary literature when preparing introduction part and primary literature when writing the body of DI consult
C. Researches done using cross sectional study design are best source of information to prepare DI consult
D. Researches done using RCT study design are best source of information to prepare DI consult

229. DI documents including consult, newsletter can be better prepared under

A. Microsoft office ppt

B. Microsoft office word

C. Microsoft excels

D. Microsoft Publisher

230. One of the following is considered as best source of information for pharmacist to convince physician during patient treatment

A. Literature obtained from cross sectional study design

B. Literature obtained from RCT study design

C. Literature obtained from simple Google search

D. source obtained from old text books

231. One of the following is true about newsletter preparation and distribution except

A. Ensure readers get the DI newsletters on a regular cycle

B. New clinical trial researches can be newsletter topics

C. DI newsletter are usually prepared by using Microsoft word

D. Text documents, such as posters, can be easily posted on a website.

232. Which of the following is the most frequent late side effect associated with daunorubicin?

A. Constipation

B. Renal toxicity

C. Cardiotoxicity

D. Hyperglycemia

233. A patient is taking three different laxative products in an attempt to treat his constipation. Which DTP has this patient?

A. Needs additional drug therapy

B. Unnecessary drug therapy

C. Ineffective drug therapy

D. Adverse drug reaction

234. One of the following hematologic tests can differentiate microcytic normochromic anemia from microcytic hypochromic anemia

A. MCHC

B. MCH

C. MCV

D. Hgb

235. One of the following activities is under “assessment” of the patient care process

A. Identify drug therapy problems

B. Increasing dose for ineffective medication

C. Resolving drug therapy problems

D. Determining the actual outcomes of drug therapy

236. The re-initiation of anti-TB medication following the development of hepatotoxicity is in the order of

A. Z → E → H → R

B. R → H → Z → E

C. R → H → E → Z

D. H → R → Z → E

237. L.N., a 76-year-old, obese (92 kg, 180cm) man, was admitted to the hospital 3 days ago for management of recurrent angina. He was started on nitroglycerin sublingual tabs and confined to bed rest with gradual increases in his oral antianginal medications. On the third day of hospitalization, he noted progressive swelling and soreness of the right calf. He denied shortness of breath (SOB), cough, or chest pain. His medical history includes coronary artery disease, MI at ages 55 and 67, and hypercholesterolemia. His medications are diltiazem CD 360 mg/day PO, isosorbide mononitrate120 mg/day PO, atenolol 50 mg/day PO, aspirin 325 mg/day PO, and simvastatin 5 mg PO Q pm. Initial laboratory

values include Hct, 36.5% (normal, 42%–52%); PT, 10.8 seconds (INR, 1.0); aPTT, 23.6 seconds (normal, 24–36); and platelet count, 255,000/mm$^3$ (normal, 150,000–300,000). Duplex scanning reveals clot formation in L.N.'s right calf extending to the right thigh. He does not exhibit signs of PE. Which statement is **true** about anticoagulation therapy:

A. Heparin bolus dose of 5,000 units IV, to be followed by a continuous infusion of 1,000 U/hour

B. Initial heparin loading doses of 70-100 U/kg followed by an infusion rate of 15-25 U/kg/hour

C. Warfarin should be initiated as soon as heparin is discontinued

D. Both heparin and warfarin will be continued for 3 months

238. M.M. is a 63-year-old woman who just finished 6 months of diet and exercise for Dyslipidemia. She has a history of gout, chronic nonischemic HF (LVEF 26%), diet-controlled DM, and asthma; she drinks 3 beers per day. No family history records are available. Her medications are albuterol metered dose inhaler, lisinopril, and furosemide. Her vital signs include BP 124/80 mm Hg and HR 75 beats/minute. Her laboratory results are: HDL-C 64 mg/dL, LDL-C 101 mg/dL, TG 98 mg/dL, and TC 185 mg/dL. Her 10-year ASCVD risk is estimated to be 7.1%. What is the most appropriate next step for M.M.?

A. Initiate moderate-intensity statin

B. Initiate high-intensity statin

C. Initiate low-intensity statin

D. Do not initiate statin therapy.

239. T.S., a 32-year-old woman with hypertension, has a plan to become pregnant. You, as a pharmacist, inform her that she will have to switch to another antihypertensive drug. Which of the following drugs is absolutely contraindicated in pregnancy?

A. Hydrochlorothiazide
B. Amlodipine
C. Candesartan
D. Propranolol

***Questions 240– 242 pertain to the following case***

Mr A.B. is a 67-year-old man who was admitted to the emergency department of a private hospital in Addis complaining of increasing shortness of breath. He has become weak on each of the last two nights, struggling for breath. On arrival at hospital and on subsequent examination and review by the admitting physicians the following information is obtained.

*HPI*: shortness of breath and tiredness at rest which is increasing over the last two months, swelling of ankles – pitting to the knees, weight of 97 kg (usually 85 kg); *Past medical history*: IHD X 10 years, MI 1 year ago, hypertension X 10 years; *SH*: regular cigarette smoker (>30 per day) and drinks approximately35 units of alcohol per week; Med History: Metoprolol 25 mg daily, Aspirin 75 mg daily, Isosorbide mononitrate 60mg daily; Labs: all are in normal range except BUN 50mg/dl, serum creatinine 1.9mg/dl

A preliminary diagnosis of acute heart failure is made.

240. Which statement is **not correct** regarding AB's heart failure?

A. The clinical findings indicate that A.B. has both right-sided and left-sided heart failure
B. Based of severity, A.B. has NYHA class III heart failure

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A preliminary diagnosis of acute heart failure is made.

240. Which statement is not correct regarding A.B's heart failure?

A. The clinical findings indicate that A.B. has both right-sided and left-sided heart failure.
B. Based on severity, A.B. has NYHA class III heart failure.

C. For acute management of the congestive symptoms, HCT is preferred over furosemide

D. A.B.'s weight should be monitored on a daily basis to ensure that excess fluid is removed.

241. If appropriately indicated, which pharmacological agent has survival benefit for A.B.?

A. Furosemide
B. Atenolol
C. Digoxin
D. Enalapril

242. Which medication has no a role for the management of A.B.'s heart failure condition?

A. Propranolol
B. Carvedilol
C. Metoprolol
D. Bisoprolol

***Questions 243 & 244 pertain to the following case***

Mr G.H., a 35-year-old female PhD student, comes to your pharmacy in quite a distressed state. She is totally unkempt and smells of body odors; her mood is volatile and she reports to you that she has sensations of insects crawling under her skin. Over the last few days, she has been feeling sick, and she is absolutely convinced that this is because her neighbor somehow put some poisons into her diet. She brings you some of her vomit to be analyzed, so that her concerns will now be 'demonstrated' and she will be able to take appropriate action against her neighbor. When you consult a physician, she was diagnosed with psychosis.

243. Which types of symptoms of G.H. are predominant?

A. Positive symptoms
B. Negative symptoms
C. Aggressive symptoms
D. Cognitive symptoms

244. Which statement is **correct** regarding the proper management of G.H.?

A. Because of its lesser Extrapyramidal side effects, chlorpromazine i preferred over Clozapine.

B. Routine laboratory tests are critical in making the diagnosis o schizophrenia

C. Negative symptoms are better treated by atypical antipsychotics tha the conventional

D. Galactorrhea is higher among atypical than conventional antipsychotics

***Questions 245 – 247 pertain to the following case***

You are a community pharmacist working in Addis Ababa when Mr. G.S. comes in to see you. He is still overweight despite being on optimal exercise and proper diet. He was on a maximum dose of glyburide (20 mg daily). His HbA1c is 9.0% and on examination he has neuropathy developing in his feet. He is also on enalapril 10 mg, simvastatin 40 mg and aspirin 75 mg daily. His blood pressure was 125/79 mmHg and his total cholesterol was 154 mg/dl (reading from three months ago). There is no microalbuminuria present.

245. Which of the following concerns you regarding this patient?

A. His diabetes is not controlled with glyburide

B. Target goal of blood pressure is not achieved

C. As it is nephrotoxic, enalapril should be discontinued

D. Neuropathy associated with drug adverse effect

246. Which oral anti-diabetic agent could have an effect to reduce the weight of G.S.?

A. Metformin

B. Insulin

C. Glibenclamide

D. Pioglitazone

247. What should be the next step to manage G.S.?

A. Add of NPH insulin C. Addition of Glimepiride

B. Addition of metformin D. Discontinue glyburide

***Questions 248 & 249 pertain to the following case***

Mrs Zinash, a 30-year-old pregnant woman presents to your pharmacy with a new prescription for cephalexin 500 mg three times a day for one week. She is worried about possible effects on the developing baby. Last week she was told that her pregnancy is on 9-week gestational age.

248. The most important causative agent of UTI, like in the case of Zinash, is:

A. H. *pylori* C. E. *coli*

B. S. *aureus* D. P. *aeruginosa*

249. Which antibiotic could be an alternative for cephalexin to treat Zinash's UTI?

A. Nitrofurantoin C. Cotrimoxazole

B. Ciprofloxacin D. Co-amoxiclav

250. An 8-yr-old boy with newly diagnosed nephrotic syndrome enters remission 7 days after beginning treatment with high-dose prednisone therapy (30 mg PO bid). The most appropriate next step in therapy is to:

A. Discontinue prednisone and monitor closely for relapse

B. Continue high-dose prednisone therapy for a total of 4-6 week

C. Change to alternate-day prednisone dosing for the next 2 months

D. Add cyclophosphamide therapy

***Questions 251 & 252 pertain to the following case***

Mrs. D.F., a 59-year-old woman, was referred to the oncology clinic at Tikur Anbessa Specialized Hospital by her general practitioner after presenting with a self-detected lump in her left breast. Following an ultrasound, fine needle biopsy and mammogram she underwent a lumpectomy and wide local excision. She was diagnosed with breast cancer. Her tumor was found to be 26 mm, mixed invasive ductal and infiltrating lobular carcinoma which was estrogen-receptor and progestogen-receptor positive, and also HER2 positive. Three axillary lymph nodes were involved but there were no distant metastases. There was no family history of breast cancer. Mrs. D.F.'s father had been diagnosed with prostate cancer aged 72, but was still alive and well. She began menses at age of 10 years. She had never smoked, and drank approximately four units of alcohol per week. Mrs. D.F. was taking hormone replacement therapy (HRT), as she was post-menopausal. Her treatment plan was to receive adjuvant (5-fluorouracil, epirubicin, cyclophosphamide) chemotherapy for four cycles, followed by four cycles of adjuvant docetaxel chemotherapy. Adjuvant trastuzumab chemotherapy was to be given concurrently with the docetaxel chemotherapy. The chemotherapy treatment was to be followed by local radiotherapy and hormonal therapy with anastrozole 1 mg orally daily.

Mrs D.F. attended the chemotherapy day unit for cycle 1 of FEC75 chemotherapy. Her weight was 79 kg, her height 1.72 m, and her body surface area 1.94 m2. Her chemotherapy was prescribed as follows:

FEC75 chemotherapy every 3 weeks: 5-fluorouracil 600 mg/m2 = 1164 mg intravenous bolus day 1, Epirubicin 75 mg/m2 = 146 mg IV bolus day 1, Cyclophosphamide 600 mg/m2 = 1164 mg IV bolus day 1

251. Which situation is **not** associated with increased risk of breast cancer?

A. Early menarche

B. Taking HRT

C. Late on first child

D. Early pregnancy

252. The order of therapeutic management of breast as in the case of D.F. is:

A. Surgery → neoadjuvant therapy → adjuvant chemotherapy → radiation

B. Neoadjuvant therapy→ Surgery → adjuvant chemotherapy → radiation

C. Radiation → Surgery →neoadjuvant therapy → adjuvant chemotherapy

D. Radiation → Surgery → adjuvant chemotherapy →neoadjuvant therapy

253. **True** regarding gastric ulcer (GU) versus duodenal ulcer (DU)

A. H. pylori infection more commonly results GU whereas NSAIDs cause DU

B. Pain from a GU is usually relieved by food intake

C. Pain associated with DU occurs during the fasting state or at night

D. Malignancy is more commonly found with DU than GU

254. Which NSAID has the least risk of PUD than the others?

A. Indomethacin

B. Piroxicam

C. Ibuprofen

D. Naproxen

255. What is the most appropriate place in therapy for long-acting beta-agonists in chronic asthma management?

A. As monotherapy

B. As rescue therapy

C. In combination with ICSs

D. In combination with cromolyn

***Questions 256 & 257 pertain to the following case***

Ms T.T., a 20-year-old woman, is admitted to the hospital in acute respiratory distress. She states that she has been using her boyfriend's albuterol inhaler on a regular basis for the past two years. During the past few months, she has been using the inhaler throughout the day on a daily basis and sometimes at night.

256. Which one of the following asthma severity she is in?

A. Mild intermittent

B. Mild persistent

C. Moderate persistent

D. Sever persistent

257. Which one of the following is the best maintenance drug for T.T's asthma?

A. Fluticasone low dose inhalation

B. Salmeterol

C. Fluticasone high dose plus Salmeterol

D. Theophylline

258. Mr D.F., a 62-year-old-man, was admitted to hospital after collapsing and experiencing a brief loss of consciousness 12 hours earlier. On admission he was fully conscious. He had lost voluntary movement in both his left arm and leg. His blood pressure was 160/100 mmHg. His previous medical history included hypertension, for which he had been prescribed hydrochlorothiazide 12.5 mg daily for 6 years. He had also been o carbamazepine 400 mg twice a day for 10 years for epilepsy. He lived a home with his wife, and smoked 15 cigarettes per day and occasionall drank alcohol.

His serum biochemistry results were: Na=137 mEq/L (normal: 135-145); K= 4.9mEq/L (normal: 3.5–5.0); Urea= 15 mg/dL; Creatinine= 0.9 mg/dl c. A computed tomography (CT) scan was ordered and reviewed. A diagnosis of ischemic stroke was made. Which statement is false regarding D.F.'s stroke management

A. Mr. D.F. is a candidate for thrombolytic therapy

B. Heparin 5000 units SQ is recommended for DVT prophylaxis

C. Aspirin should be started within 48 hours of onset

D. CT scan or MRI scan to differentiate the type of stroke

259. Which statement is correct regarding gout:

A. Gout attacks are usually poly articular

B. Allopurinol is indicated to manage acute attack of gout

C. Gout affects men more often than women.

D. Aspirin is indicated to relieve gout associated pain

260. A 25-year-old woman has a long history of inflated self-esteem or grandiosity, talking so fast. Her attention shifts between many topics. She also undertakes things without concern. She is prescribed with Lithium 300 mg daily. Which laboratory tests should be monitored for this woman?

A. Renal function test and liver function test

B. Liver function test and thyroid function test

C. Renal function test and thyroid function test

D. Liver function test and cardiac function test

261. In the management of DKA which one is **not** recommended

A. Fluid resuscitation

B. Management of hypokalemia

C. Insulin administration

D. Rapid reduction of serum osmolality

262. In the management of Type 2 DM, euvolemia should be ensured before the administration of

A. GLP-1 analogues

B. DPP-4 inhibitors

C. SGLT-2 inhibitors

D. TZDs

263. Testosterone is indicated in the management of erectile dysfunction associated with

A. Hypogonadism

B. Spinal cord injury

C. Type 2 DM

D. Hypertension

264. Which of the phosphodiesterase inhibitors is called weekend drug?

A. Sildenafil

B. Vardenafil

C. Tadalafil

D. Avanafil

265. A 36, pregnant woman with severe acne consults you regarding the choice of treatments. Which antibiotic do you recommend for this woman?

A. Doxycycline 100 mg daily

B. Tetracycline 500 mg twice daily

C. Erythromycin 500 mg twice daily

D. Isotretinoin 10 mg once daily

266. You are evaluating Mr. Bekele for his BPH management with the physician. The patient is taking another anti-hypertensive agent. Which of the following alpha antagonist is preferred for Mr. Bekele being at risk of developing hypotension?

A. Doxazocin

B. Tamsulosin

C. Prazosin

D. Terazosin

267. What precautions do you recommend for a female pregnant pharmacist while dispensing finasteride tablets?

A. To avoid exposure of sun light

B. To wear gloves while counting tablets

C. To wash hands after dispensing tablets

D. To apply antiseptics after dispensing

268. The most important cause of DKA is

A. Infection

B. New onset DM

C. Insulin omission

D. Myocardial infarction

269. Which of the following are **true** about the design of chemotherapy regimens?

A. They are always designed with a cure in mind.

B. Monotherapy is the standard of care for most types of cancer.

C. Combining drugs with different mechanism of action is recommended

D. Combining drugs with concomitant side effects is recommended

270. Which one of the following women is **less** at risk for breast cancer?

A. A 39 years old woman who started menstruation at the age of 11

B. A 25 years old woman who had her first pregnancy at the age of 16

C. A 56 years old woman who went through menopause at the age 55

D. A 50 years old menopause woman getting hormone replacement therapy

# Part II

- Dispensing Practice
- Drug Information Service
- Drug supply management
- Manufacturing
- Regulatory
- Professional ethics

1. According to WHO, which one is among the factors that should be considered for selection of essential medicines?
   - A. Pattern of prevalent diseases
   - B. Treatment facilities
   - C. Financial resources
   - D. All of the above
2. Which one of the following is/are the objective of National Drug Policy?
   - A. Developing of national pharmaceutical production
   - B. Promotion of therapeutically sound and cost-effective use of drugs
   - C. Increase foreign exchange for pharmaceutical import
   - D. A and B
3. Which component of national drug policy advocates increasing government fund for priority diseases, and the poor and disadvantaged?
   - A. Legislative and Regulatory framework
   - B. Pharmaceutical quality assurance
   - C. Rational use
   - D. Drug financing
4. Which one of the following is the advantage of well-functioning supply chain that could benefit to the public health programs?
   - A. Reduces program impact
   - B. Compromise quality of care
   - C. Improve cost effectiveness and efficiency
   - D. A and B
5. Which one of the following is a method of drug quantification technique which utilizes retrospective and prospective data in a sample of health facilities?
   - A. Consumption method
   - B. Proxy consumption method
   - C. Morbidity method
   - D. A and B

6. In the presence of complete and accurate data, which one is the most precise method for quantifying pharmaceutical usage?
   A. Consumption
   B. Morbidity
   C. Proxy consumption
   D. All have similar precision
7. Which of the following is **false** about well-designed and operated inventory control system?
   A. Prevents shortages of pharmaceuticals
   B. Promotes oversupply of pharmaceuticals
   C. Maintain an appropriate stock level of pharmaceuticals
   D. None of the above
8. Which one of the following is used to determine quality of the final drug product?
   A. Raw material (ingredient)
   B. Technical knowhow
   C. Packaging and storage
   D. All of the above
9. Which one of the following is possible problem with drug donations?
   A. Donation of drugs which comply with local treatment guidelines
   B. Donation of drugs which are not relevant for the emergency situation
   C. Drugs in which health workers are always familiar with donated one
   D. All of the above
10. WHO drug use indicators are developed to measure ____
   A. Prescribing practice by health providers
   B. Patient care (consultation and dispensing)
   C. Availability of facility specific factors which support rational medicine utilization
   D. All of the above

11. Which of the following is true about Defined Daily Dose (DDD)?
    A. Converts and standardizes readily available quantity data into estimates of clinical exposure to medicines
    B. It is independent of price and formulation
    C. Should only be used in settings where reliable procurement, inventory or sales data have been recorded
    D. None of the above

12. Which one of the following is **not true** about qualitative methods of investigating drug use problem?
    A. Are better suited examine the feeling attitudes or motivations that underlie an observed problem
    B. Are helpful in exploring the cause of a problem, constraints to changes in behavior, and opportunities for correcting a problem
    C. Can use Focus group discussion, in-depth interview and structured observation
    D. All of the above

13. Which of the following is true about goals of Distribution Management?
    A. Encourages intermittent supply of drugs
    B. Keep drugs in good condition throughout distribution process
    C. Encourages inadequate geographic coverage
    D. Maximize drug losses

14. Which of the following is true about collection and delivery methods of drug distribution?
    - A. Collection method allows for better checking, handling and security of goods received
    - B. In delivery method, health facility may be closed when delivery truck arrives
    - C. In collection method, people meet from and discuss problems
    - D. A and B
15. Which of the following is true about basic storage system for pharmaceuticals?
    - A. Heavy and fragile items are best to put on the lower shelves
    - B. Frequently picked items should be put at the top of the shelf
    - C. Direct storage of cartons on the warehouse floor is best recommended
    - D. All of the above
16. Which one of the following is the consequence of improper disposal of pharmaceuticals?
    - A. Contamination of water
    - B. Air pollution/ release of toxic pollutants
    - C. Diversion of expired to the market for resale and misuse
    - D. All of the above
17. Which one of the following is among the potential DMIS pitfalls?
    - A. Poor remote site coverage
    - C. Presence of sustainability
    - B. Good systems reliability
    - D. B and C
18. True about Monitoring and Evaluation?

A. Monitoring is periodic/episodic assessment of overall achievements and impacts

B. Monitoring allows corrective action during program implementation

C. Monitoring analyses progress towards meeting established objectives, goals or results

D. All of the above

19. Among the following alternatives, which one is the common pitfall for both monitoring and evaluation?

A. The presence of adequate resources

B. Presence of comparison data

C. Lack of comparison data

D. Presence of objectivity

20. Which one of the following is among the factors which contribute for the presence of poor medication adherence among patients?

A. Poor understanding of instruction

B. Disease and treatment related factors

C. Physical limitations

D. All of the above

21. Which one is an example of **irrational** prescribing?

A. Lack of documented medical history

B. Inadequate examination of patient

C. Under prescribing

D. All of the above

22. Which one of the following shows the advantage of limited list of Essential Medicine related to prescribing objective?

A. Increase availability of irrational treatment

B. Enable to Provide focused drug information

C. Reduction of antimicrobial resistance

D. All except A

23. Which of the following term correctly describes the process of acquiring supplies from private or public supplier or through purchasing from manufacturer or agencies or bilateral aids program?

A. Quantification
C. Forecasting
B. Logistic management
D. Procurement

24. All of the following are the challenges of procurement **except:**

A. Getting accurate quantification and forecast data
B. Lengthy procurement process
C. Delays in funding allocation and release
D. None of the above

25. All are the characteristics of good pharmaceutical procurement for health system **except:**

A. Procurement by brand name
C. Limited to EML or formulary list
B. Purchase in bulk
D. A and C

26. Which one of the following is the source of data for morbidity method of quantification?

A. Stock records and distribution report
B. Health information system
C. Invoices from supplier and dispensing records
D. A and C

27. Which one of the following inventories (stock) management system of pharmaceuticals should be kept with the product inside the store and should be updated after each and every transaction or adjustment?

A. Stock card
C. Bin card
B. RRF
D. HMIS

28. What is the largest amount of each pharmaceutical a facility should hold at any one time?

A. Safety stock/buffer stock
C. Minimum months of stock
B. Emergency order point
D. Maximum months of stock

29. Which one of the following is **not** the consequence of poor drug quality?

A. Lack of therapeutic effect
C. Increase program credibility
B. May increase toxic/adverse reactions
D. Wastes money

30. All of the following are the characteristics of tools used for investigation of medicine use **except**:

A. Triangulated
C. Participatory
B. Flexible
D. None of the above

31. Which WHO drug use indicator studies average consultation time and dispensing time of health care professionals in the health facilities?

A. Prescribing practice by health providers
B. Patient care
C. Availability of facility specific factors which support rational medicine use
D. All of the above

32. All of the following are the characteristics of core WHO drug use indicators **except:**

A. Highly standardized
B. Need adaptation
C. Provide quick and reliable assessing of pharmaceutical service
D. None of the above

33. Which one the following drug use indicator is **not** part of prescribing indicators?
   A. Percentage of drugs actually dispensed
   B. Percentage of encounters with antibiotic prescribed
   C. Percentage of encounters with injection prescribed
   D. B and C

34. Which one of the following is true about health logistics system of Ethiopia?
   A. The maximum month of stock for health center is two month
   B. The minimum month of stock for hospital is one month
   C. The emergency order point for hospital is two weeks
   D. Maximum month of stock for health post is one month

35. While dispensing at community pharmacy you have received a prescription containing **methotrexate** and the patient asks you about the indication of this drug. What is your response to this patient's question?
   A. It is indicated for cancer
   B. It is indicated for arthritis
   C. It has multiple indication and better to ask your physician
   D. A and B

36. All of the following accompanying symptoms for headache warrant referral **except:**
   A. Loss of consciousness
   B. Neck stiffness
   C. Paraesthesia
   D. Fever

37. An appropriate laxative preparation for an elderly patient who is bedridden is:

A. Bisacodyl
B. Senna
C. Magnesium sulphate
D. Lactulose

38. Alfuzosin is used in benign prostatic hyperplasia because it:

A. Lowers blood pressure
B. Decreases urinary flow rate
C. Constricts smooth muscle
D. Relaxes smooth muscle

39. Which of the following antibacterial agents is **not** presented for systemic use?

A. Sodium fusidate
B. Vancomycin
C. Gentamicin
D. Mupirocin

40. All of the following drugs can be prescribed for the management of scabies **except**:

A. Sulfur oxide ointment
B. Benzyl benzoate lotion (BBL)
C. Ivermectin tablet
D. None of the above

41. Triarncinolone differs from hydrocortisone in that it:

A. is less potent as an anti-inflammatory
B. is available in the oral dosage form
C. has a longer duration of action
D. has more mineralocorticoid activity

42. Which of the following products is **not** indicated as an agent to be used in gastrointestinal ulcer healing?

A. Omeprazole
B. Misoprostol
C. Loperamide
D. Ranitidine

43. Which of the following is effective in the management of fungal nail infection?

A. Griseofulvin  
B. Terbinafine  
C. Nystatin  
D. A and B

44. The refrigerator in the pharmacy that is used for storage of pharmaceutical products should be kept at a temperature of:

A. 0–3°C  
B. 2–8°C  
C. 5–10°C  
D. 6–12°C

45. A patient comes to the pharmacy requesting Mebendazole tablets. What advice should be given?

A. Dosage regimen is four times daily for 5 days  
B. It can be used in children under 1 year  
C. All the members of the family should be treated  
D. None of the above

46. A patient comes to the pharmacy requesting advice on a cold. Which of the following symptoms would indicate referral?

A. Rhinorrhea  
B. Dysphagia  
C. pain on coughing  
D. B and C

47. A stock solution is diluted to make a 1 in 5 strength solution. The amount in milliliters of the stock solution that is present in 250 mL of the resulting solution is:

A. 1  
B. 25  
C. 50  
D. 250

48. Appropriate auxiliary labeling for Metronidazole suspension includes which of the following?

A. Shake well before use

B. Take with plenty of fluids

C. Avoid prolonged exposure to sunlight

D. Keep refrigerated

49. Given that 30 g of a mild corticosteroid ointment covers the entire surface of any adult for one application, how much ointment (in grams) should be dispensed for an 18-year old patient who requires treatment on approximately 20% of her body with twice daily application for 14 days?

A. 12 g

B. 84 g

C. 124 g

D. 168 g

50. A patient is taking Amoxicillin 500 mg by mouth, three times a day for 7 days. How many capsules of 500 mg of Amoxicillin will you dispense?

A. 42

B. 21

C. 7

D. 30

51. The usual expiration date that should be placed on a cream prepared in a pharmacy is:

A. 1 week

B. 2 weeks

C. 4 weeks

D. 8 weeks

52. Alcoholic drink should be avoided with:

A. Amoxicillin

B. Metronidazole

C. Ciprofloxacin

D. Doxycycline

53. A year old pregnant lady was diagnosed to be suffering from hemolytic anemia; no exact cause of it could be found except that of a history of drug intake to control her hypertension the most likely drug she took may be:

A. Propranolol
B. Captopril
C. Clonidine
D. Methyldopa

54. To treat a case of chronic congestive cardiac failure a drug is to be selected which can reduce the mortality also; but one of the followings can hardly reduce the mortality like:

A. Spironolactone
B. Captopril
C. Enalapril
D. Digoxin

55. The possible interactions of ACEI and spironolactone include:

A. Increase attacks of dry cough
B. Allergic reactions
C. Hyperkalemia
D. Hypercalcemia

56. A 40 year old patient was admitted in a hospital emergency due to post myocardial infraction - Acute Pulmonary Edema. He may be given:

A. Acetazolamide
B. Hydrochlorthiazide
C. Furosemide
D. Manitol

57. A 30 year old female developed antibiotic – induced colitis due to C. difficile; she was given Metronidazole to treat it but it proved ineffective. Now she can respond to oral:

A. Amoxillin
B. Erythromycine
C. Chloramphenicol
D. Vancomycine

58. While you are working at community pharmacy you received a prescription containing antacid and ciprofloxacin. What counseling points should be addressed for this patient?

A. Avoid use of milk and egg
B. Take ciprofloxacine 1 hr before 2 hrs after antacid
C. Take ciprofloxacine with a glass of water
D. None of the above

59. How many tablets of prednisolone 5 mg should be dispensed to a patient who has been prescribed prednisolone 25 mg for 5 days:

A. 25
B. 125
C. 5
D. 50

60. Which of the following active ingredients is **not** used for the management of cough?

A. Codeine
B. Dextromethorphan
C. Vitamin C
D. Diphenhydramine

61. A mother comes to the pharmacy with her 3-year-old son who has a cough. Which of the following list of symptoms is most likely to indicate an allergy?

A. Fever
B. Chesty cough
C. Rhinorrhea
D. Headache

62. When advising a patient on the correct use of eye drops, which one of the following statements is **incorrect?**

A. Tilt your head back and pull down the lower lid of your eye with the index finger
B. Hold the tip of the dropper in contact of the lower lid

C. Gently squeeze the dropper so that the correct number of drops are released

D. Close the eye for 2–3 minutes and wipe any excess liquid from your face with a tissue

63. A patient weighs 75 kg and requires a drug G at a dose of 4 mg/kg per day in three divided doses. Drug G is available as 20 mg capsules. What is the total daily amount of drug G required by the patient, and how many capsules should the patient take for each dose?

A. 300 mg and 15 capsules
C. 100 mg and 5 capsules
B. 300 mg and 5 capsules
D. 100 mg and 2 capsules

64. A 9 years old baby weighs 27 kg. He has been prescribed a suspension of drug C of strength 40 mg/5 ml at a dose of 4 mg/kg daily in three divided doses. How much suspension should his mother give him for each dose?

A. 4.5 ml
C. 5 ml
B. 6.75 ml
D. 13.5 ml

65. An iron complex elixir is to be administered to a 10-day-old baby boy at a dose of 1 drop (approximately 500 micrograms iron) per 450 g body weight three times a day. The baby boy weighs 2.7 kg, so which of the following is a suitable dose of the iron elixir?

A. One drop three times daily
C. Six drop three times daily
B. Three drops three times daily
D. Six drops one times daily

66. What volume of phenytoin suspension 30 mg/5 ml is required to be added to a suitable diluent to obtain 150 ml phenytoin suspension 20 mg/5 ml?

A. 75 ml
C. 125 ml
B. 100 ml
D. 120 ml

anti-fungal shampoo contains 2% of ketoconazole. How much grams of toconazole is needed to prepare 2 litters of the 2% of ketoconazole ampoo?

50 gm C. 40 gm

100gm D. 1 gm

hen 2.50 ml of diluent is added to 1 gm of dry powder to make a solution oncentration of 0.325 g/ml is obtained. What is the approximate volume the reconstituted solution?

3.08 ml B. 30.8 ml C. 6.16 ml D. none

ow many milliliters of a 40% w/v stock solution should be used to make 0 ml of a 5% w/v solution?

25 ml B. 12.5 ml C. 50 ml D. 100ml

ow many grams 5% of hydrocortisone should be added to prepare 40 ams of 1% ointment?

4 gm B. 2 gm C. 8 gm D. 6 gm

you mix 4 g of 2% (w/v) of betamethasone ointment with 12 g of aseline, what will the final concentration of the preparation?

0.5% B. 1.0% C. 0.75% D. 6%

000 ml normal saline was ordered for a patient to be taken over 6 hours. hat should be the flow rate in ml/min?

. 4.2 ml/min B. 2.8 ml/min C. 1ml/min D 6ml/min

67. An anti-fungal shampoo contains 2% of ketoconazole. How much grams of ketoconazole is needed to prepare 2 litters of the 2% of ketoconazole shampoo?

A. 50 gm
C. 40 gm
B. 100gm
D. 1 gm

68. When 2.50 ml of diluent is added to 1 gm of dry powder to make a solution a concentration of 0.325 g/ml is obtained. What is the approximate volume of the reconstituted solution?

A. 3.08 ml B. 30.8 ml C. 6.16 ml D. none

69. How many milliliters of a 40% w/v stock solution should be used to make 200 ml of a 5% w/v solution?

A. 25 ml B. 12.5 ml C. 50 ml D. 100ml

70. How many grams 5% of hydrocortisone should be added to prepare 40 grams of 1% ointment?

A. 4 gm B. 2 gm C. 8 gm D. 6 gm

71. If you mix 4 g of 2% (w/v) of betamethasone ointment with 12 g of Vaseline, what will the final concentration of the preparation?

A. 0.5% B. 1.0% C. 0.75% D. 6%

72. 1000 ml normal saline was ordered for a patient to be taken over 6 hours. What should be the flow rate in ml/min?

A. 4.2 ml/min B. 2.8 ml/min C. 1ml/min D 6ml/min

73. Which one of the following is **not** criterion for a customer who wishes to cover personal damages for personal injuries?

A. Presence of duty of care

B. The presence of breach of the duty

C. Presence of damage as a result of that breach.

D. The damage was reasonably foreseeable in all circumstances

74. Which one of the following is **not** included in pharmacovigilance?

A. Ensuring drug availability

B. Reporting ADE to the regulatory body

C. Performing Periodic safety update report

D. All of the above

75. Which of the following is **not** area of focus in principles of medicin regulation in Ethiopia?

A. Safety

B. Efficacy

C. Cost

D. Quality

76. The scope of medicine regulatory sector in Ethiopia includes

A. Practices

B. Products

C. Professional

D. All of the above

77. A pharmacist talks to his friend, an accountant, about patient's medic condition and the medication that the patient is taking. Which of the ethi principle is breached by the pharmacist?

A. Confidentiality

B. Fidelity

C. Maleficence

D. Justice

78. Which one of the following is unethical practice in pharmacy profession?

A. Respect patients

B. Collaborate with health professional for malpractice

C. Cooperate with other health care professional to improve patient care

D. None

79. Which one of the following are the possible causes of unethical behavior?

A. Being greed

B. Ignorance

C. Environment influences

D. All

80. All of the followings are unethical practice in pharmacy profession **except:**

A. Legal and proper advertisement

B. Violation of confidentiality

C. Exceeding one's level of professional competence

D. Negligent practice

81. Which one of the following should be definitely excluded in any clinical trial or a study on drugs due to ethical issues?

A. Young men

B. Young women

C. Pregnant women

D. A health professional

82. One of the following is **not** a professional community pharmacy service?

A. Promotion of healthy lifestyles

B. Preparation of a customized prescription medication

C. Patient counseling

D. Diagnosis and dispense medications

83. The patient's need to ask for a particular OTC medicine/self-medication may arise due to:

A. Prior use for similar conditions

B. Influence of advertisements or the media.

C. Recommendations by friends or relatives.

D. All of the above

84. All of the following should be taken into consideration during extemporaneous compounding of prescriptions **except**:

A. Conditions required for the extemporaneous preparation

B. Identify dosage forms

C. Make extemporaneous compounding in normal dispensary area

D. All of the above

85. Which of the following is not included in community pharmacy services?

A. Health screening

B. Emergency hormonal contraception

C. Preparation of cytotoxic drugs

D. Smoking cessation clinics

86. Which one is false about the area considered for the pharmacy depending on the services offered?

A. Patient counseling should take place in a professional manner

B. Semi-private area provides the privacy required to advise patients on sensitive issues.

C. Separate private area allows the pharmacist to counsel patients on emotional problems

D. Consultation area enables for the provision of screening and monitoring services

87. Which of the following is not true about Standard Operating Procedures (SOPs)?

A. It is to not worthy that SOPs are reviewed regularly
B. SOPs should be applicable at all times
C. They are an integral part of the pharmacist's role.
D. They comprise detailed written instructions for specific tasks

88. A community pharmacy bought 50 tablets of metoprolol with 250.00 birr from the local wholesaler. The percentage mark up (profit margin) is 25%. What will be the retail cost for 30 tablets of the above drug in birr?

A. 187.5 C. 150
B. 416.65 D. None of the above

89. Which of the following is not currently among pharmacy services in hospital?

A. Recommending new information to nursing service
B. Communicating new product information to medical staff
C. Recommending to patients on evidence based non-pharmacologic therapies
D. Recommending to prescribers on evidence based drug therapies

90. Which of the following is not among benefits of satellite pharmacies in hospitals?

A. Shorter turnaround time for individual medication orders
B. Facilitating interactions of pharmacists with medical staff
C. Less pharmacy personnel required
D. Reduced wastage of pharmaceuticals

91. Which of the following is not considered during interpretation & evaluation of the prescription during dispensing to outpatient?

A. Drug interactions
B. Pregnancy/breast feeding status for women patients
C. History/current status of renal and liver functions
D. Family history

92. One of the following is a reason for compounding of preparations in community pharmacy **except:**

A. To change strength of marketed products to suit a need of specific patient
B. To prepare preservative free or specially flavored preparations for some patients
C. To prolong shelf life of some commercially available pharmaceuticals
D. To produce large quantity of dosage forms to supply for nearby pharmacies

93. All of the following are skills required to be integrated for the practice of clinical pharmacy **except**:

A. Communication skills
B. Patient monitoring skills
C. Laboratory and diagnostic testing skills
D. None of the above

94. Which of the following is **not** among the activities expected from clinical pharmacists?

A. Getting information on medication histories
B. Provide recommendations on diagnosis
C. Discharge planning
D. Provide recommendations on drug selection and follow-up

95. In which of the following steps of pharmaceutical care processes does the clinical pharmacist selects and recommends the appropriate patient specific pharmacotherapy?

A. Assessment
B. Follow up evaluation
C. Care plan
D. Monitoring

96. Which of the following is **not** among the roles of ambulatory care pharmacists?

A. Renal impairment dosing adjustment
B. Discharge planning
C. Preventing of antithrombotic-related hemorrhage
D. Preventing complications among diabetics

97. Which of the following department in pharmaceutical industry calls various health care professionals to provide comprehensive information on a product to encourage the product's appropriate use by the health care providers?

A. Research and development
B. Production and quality control
C. Medicines information
D. Legal affairs

98. Which of the following is a main reason for regulating medicines?

A. The use of ineffective and poor-quality medicines can result in therapeutic failure

B. Money spent on substandard medicines is wasted

C. There is an information irregularity between stakeholders

D. All of the above

99. Choose a **false** statement about storage of medicine in ward pharmacies

A. The optimal temperature of most drugs is to keep the medicines below 25 degree Celsius.

B. The optimal temperature for most biological is to keep the medicines between 2 to 8 degree Celsius.

C. Liquid dosage forms should be stored in the upper shelves

D. When new stock is received correcting stock levels should be carried.

100. **False** about therapeutic drug monitoring (TDM)

A. Its main focus is on drugs with a narrow therapeutic range

B. Aimed at improving patient care

C. It is highly recommended for all medications

D. Can be used as a tool to assist in evaluating patients' compliance

101. Which of the following is **not** a benefit of performing medication reconciliation activities in a hospital setting?

A. Reduction of medication errors

B. Reduction of inventory pilferage

C. Assessment of patient adherence to therapy

D. None of the above

102. Patient medication records should include all **except**:

A. Medication allergies

B. Diagnosis

C. Current medication therapy

D. Pets kept at home

103. When comparing amlodipine and nifedipine, amlodipine:

A. Has a longer duration of action

B. Can be used in hypertension

C. Is available as a spray formulation

D. Causes ankle swelling as a side-effect

104. A patient comes to the pharmacy with mosquito bites. Which of the following preparations would be most suitable?

A. Paracetamol tablets

B. Hydrocortisone cream

C. Fusidic acid cream

D. Benzocaine spray

105. Suspected adverse reactions:

A. are reported by health professionals directly to international pharmacovigilance center

B. may be reported only by pharmacists

C. should be immediately disseminated to the media to alert the public

D. should be investigated by the regulatory body

106. Thiazide diuretics should usually be avoided in patients with:

A. Hypertension

B. Hypernatraemia

C. Hypercalcaemia

D. Heart failure

107. The maximum volume that should be given as a single intramuscular injection at one site is:

A. 20 ml

B. 0.1 ml

C. 1.0 ml

D. 5 ml

108. Which of the following does **not** alter a patient's insulin requirements?

A. Pregnancy
B. Major surgery
C. Proton pump inhibitors
D. Severe infection

109. Preparations used for infant colic contain:

A. Simethicone
B. Metoclopramide
C. Domperidone
D. Lactulose

110. Which statement is **true** about drug information?

A. Drug information is the provision of written information about drugs in response to a request from other health professionals
B. Drug information response should not be given verbally.
C. Drug information question should necessarily be patient specific.
D. All of the above

111. One of the following statements best describes drug information service:

A. Responding to drug information questions,
B. Conducting medication use evaluations
C. Participating in medication quality assurance programs
D. All of the above

112. One of the following **does not** help provide accurate & timely answer to DI questions:

A. Understanding the nature of the question
B. Asking requestor all necessary questions to get to ultimate question
C. Systematic approach
D. Asking the requestor exhaustively to ask us the ultimate question himself or herself

113. What is the advantage of determining & categorizing the ultimate question?

A. Helps develop a more effective search strategy
B. Helps select the resource with the highest probability of containing the desired information
C. Helps decrease the time requirement and increase the accuracy of the response
D. All of the above

114. The **incorrect** statement about evaluation, analysis, and synthesis in responding DI questions is__

A. Evaluating the quality of the information is key to produce a good DI response
B. Information obtained from randomized controlled double-blind studies is the most reliable.
C. Confirm information with other references to assure consistency between various resources
D. None of the above

115. Identify the **wrong** statement about role of Pharmacists:

A. Responsible for technicians' activities & performance
B. Educating patients about their medications
C. Suggesting medication alternatives to physicians
D. None of the above

116. All are responsibilities of hospital pharmacists **except:**

A. Dispensing medications
B. Monitoring patient health and progress
C. Performing accurate diagnosis
D. Advice to those who prescribe or use pharmaceuticals

117. All are pharmacist role in industry **except:**

A. Drug development research,
B. Post-approval drug marketing,
C. Pharmaceutical care
D. Consulting and advisory

118. Identify **false** statement about DTC?

A. Hospital should develop their own STGs
B. The DTC should meet at least six times/year
C. Secretary in DTC is physicians
D. The formulary should be reviewed and updated at least annually

119. Which of the following is **not** the benefit of an Effective Formulary System?

A. Physicians develop greater experience with many drugs
B. Ineffective, high-cost drugs will not be available
C. Economies of scale will increase availability of essential drugs
D. Reduced inventory cost

120. All are the advantage of STG **except:**

A. Provides information for forecasting and ordering
B. Provides a system for controlling costs
C. Discourage ongoing critical thinking
D. Lower cost of treatment

121. Formulary contains all of the following information **except:**

A. Drug description
B. Dosage form
C. Package size
D. Diagnostic criteria

122. Individuals susceptible to an ADR include all **except:**

A. Those with multiple diseases

B. Geriatric or pediatric patients

C. Those receiving drugs with a wide therapeutic index

D. Those receiving drugs with a potential for multiple interactions

123. How should a health professional approach a colleague about his/her culturally insensitive behavior or remarks?

A. He/She should be intolerant and open to the colleague's opinions.

B. He/She should avoid direct confrontation with the colleague.

C. He/She should warn other patients about the colleague.

D. He/She should speak honestly, but respectfully, to the colleague.

124. Poor adherence results in which of the following outcomes?

A. Increased patient morbidities and mortalities.

B. Slight improvement in health.

C. Reduced health care costs.

D. Weakened physician–patient relationship.

125. Which of the following pharmacist barriers can affect a patient's adherence?

A. Lack of insight into the patient's illness.

B. Inadequate explanation of instructions.

C. Cost of medications or treatment.

D. Distraction by other life issues or priorities

126. Which one of the is the objective of drug informatics

A. Promote evidence practice in health institution

B. Meet the patients' needs while providing pharmaceutical care

C. To improve patients adherence through providing drug information

D. All of the above

127. What is the importance of evaluating information from the Website?

A. Anyone can put up a Web page at anytime

B. Many pages are not kept up-to-date

C. less trustworthy than scholarly publications

D. All of the above

128. All of the following Web has high quality of evidence **except:**

A. Government (.gov)

C. Education (.edu),

B. Pharmaceutical manufacturers (.com)

D. Association (.org)

129. Which of the following is primary reference?

A. Randomized clinical trials

C. Textbooks

B. MEDLINE

D. PUBMED

130. Which of the following is tertiary reference?

A. Randomized clinical trials

C. Textbooks

B. MEDLINE

D. PUBMED

131. Which one of the following is disadvantage of primary reference?

A. Misleading conclusions based on only one trial without the context of other researches

B. Access to detailed information about a topic

C. The ability to personally assess the utility and validity of study results

D. More recent than tertiary or secondary literature

132. Which one of the following is disadvantage of tertiary source?

A. The lag time associated with publication, resulting in less current information

B. Tertiary text may be incomplete due either to space limitations of the book

C. The information is not updated

D. All of the above

133. All of the following statements are true regarding drug information functions **except:**

A. The provision of medication information is among the most fundamental responsibilities of pharmacists

B. The Smart phones, PDA and other technologies are crucial for simplification and correctness of the information.

C. Pharmacist's responsibilities in the DIC are answering drug information queries based on client's requirement only.

D. None of the above

134. One of the following is not the skill required for pharmacists to provide drug information service.

A. Formulating appropriate question

B. Use of systematic approach to search information

C. Evaluating information critically

D. Skills related to physical examination of patients

135. In which part of the written response should the primary literature be reviewed and discussed?

A. Introduction

B. Conclusion

C. Body

D. Reference

136. Which one of the following is **not** among the limitations of the use of literature evaluation to reach clinical decision?

A. Differing interpretation

B. Conflicting findings

C. Publications of poor-quality research

D. Obtaining new findings for clinical controversies

137. Which one of the following drugs is **not** classified as High Alert Medications?

A. Warfarin

B. Folic acid

C. Vincristine

D. Potassium chloride

138. Which of the following statement is correct about patient centered care;

A. Focuses on decisions and actions taken by the physician and other health care providers

B. Focuses on system of drug order fulfillment

C. Focuses on patient understanding and actual medication taking behavior

D. All of the above

139. Which one of the following is **not** patient care responsibility in the pharmacy practice?

A. Developing ongoing relationship with patient

B. Help patients to reach therapeutic goal

C. Engage in an open exchange of information

D. All are patient care responsibilities

140. The major reason that a pharmacist may want to work to improve communication skills is to:

A. Increase the number of prescriptions filled.

B. Improve patient adherence with medications.

C. Improve the patient-physician relationship.

D. Increase personal job satisfaction.

141. Which statement is true about communication barriers between pharmacists and patients?

A. Using a counseling area will prevent them.

B. We can't change them so we have to accept them.

C. If we ignore them, they usually go away on their own.

D. We need to identify them before we can change them

142. Which of the following is an environmental barrier for pharmacist-patient communication?

A. Emotional objectivity

B. Pharmacy prescription counter

C. Poor eye contact

D. Personal shyness

143. Which statement best describes empathy?

A. Empathy is about listening to patients complain about their health problems.

B. Empathy is about being open to accept and understand patient's feelings.

C. Empathy is about agreeing with a patient when they express their feelings.

D. Empathy is about being sympathetic when things go wrong for a patient.

144. Some of the skills that are needed for good communication include:

A. Listening
C. Phrasing questions
B. Responding
D. All of the above

145. Which behavior seeks to "win" in conflict situations by dominating or intimidating others during pharmacist-patient communication?

A. Passive
C. Assertiveness
B. Aggressive
D. None of the above

146. All are true about assertive pharmacists in pharmacist-patient communication **except:**

A. Waiting to be asked questions
B. Try to resolve problems in direct manner
C. Take active role in patient care
D. Encounter conflicts and seek mutual solutions

147. Which one is destructive consequence of conflicts in pharmacist-patient relationship?

A. Creates sides
C. Strengthens relationship
B. Improves efficiency
D. Decrease risk for errors

148. Team work behaviors doesn't include;

A. Cooperating in the patient-centered delivery of care
B. Coordinating one's care with other health professionals
C. Collaborating with others through shared decision making
D. Focus mainly for the benefit of professional team than patients' concern

149. Which one of the following factors limits to use a written communication approaches?

A. Accuracy of the information conveyed

B. Age of the patient

C. The political system

D. Literacy level of patients

150. Which one of the following conflict management models has both low assertiveness and low cooperation?

A. Avoiding

B. Collaboration

C. Compromising

D. Competing

151. In inter-professional collaborative health work, what is the major goal of the team?

A. Improve patient care

B. Improve profit margin

C. Maintain the health professions personal need

D. To decrease the work load

152. The relative amount of an administered dose that reaches the general circulation and the rate at which this occurs is:

A. Lethal dose

B. Bioavailability

C. Biopharmaceutics

D. Bioequivalence

153. The substantial degradation of an orally administered drug caused by enzyme metabolism in the liver before the drug reaches the systemic circulation is

A. First-pass metabolism

Disposition

C. Excretion

D. Distribution

154. Drug products that contain the same active ingredient but not necessarily in the same salt form, amount, or dosage form are called ___

A. Pharmaceutical equivalents
C. Bio alternative
B. Bioequivalence
D. Pharmaceutical alternatives

155. The presence of food in the gastrointestinal tract can influence the rate and extent of drug absorption in the following mechanism **except**:

A. Complexation of drugs with components in the diet
B. Alteration of gastric emptying rate
C. Alteration of gastric PH
D. Decrease in blood perfusion to the enterohepatic circulation

156. Time required to reach steady state concentration of a drug primarily depends on:

A. Dose
C. Route of administration
B. t1/2 (half-life)
D. Dosage form

157. Which one of the following is possible clinical significance of plasma protein binding of a drug?

A. Fasten onset of drug action.
C. May require lower dose
B. Prolonged duration of action
D. Shorten duration of drug action

158. All of the following are possible considering factors during dosage regimen selection **except:**

A. Therapeutic window of the drug
C. Route of administration
B. Side effects of the drug
D. Gender of the patient

159. For which type of the following drugs the "constant-dose, interval extension" method is preferred?

A. Antibiotics having time-dependent activity
B. Beta-lactam antibiotics
C. Antibiotics having concentration-dependent kill rate
D. Macrolide antibiotics

160. Which one of the following drug is a potent CYP 450 enzyme inducer?

A. Valproic aci
B. Amoxicillin
C. Cimetidine
D. Carbamazepine

161. Which one of the following drug needs acidic environment for its better therapeutic benefit?

A. Ketoconazole
B. Metronodazole
C. Furosemide
D. Ciprofloxacin

162. The time period in which the plasma concentration of the drug remains above the minimum effective concentration is:

A. Onset of action
B. Duration of action
C. Intensity of action
D. Therapeutic range

163. Which of the following presentation in uremic patient cannot affect bioavailability of orally administered drugs?

A. Diarrhea
B. GI motility
C. Serum pH
D. Vomiting

164. Assume that both phenytoin and warfarin have high albumin binding tendency and if both are taken concomitantly, what is the best strategy to avoid their interaction?

A. Their dose should be increased

B. Their dose should be decreased

C. Use same dose for both

D. Just separate their time of administration

165. For patients with liver disorders, which accompanied by a decline in microsomal enzyme activity, what will be the duration of action drugs that are highly metabolized by the liver?

A. Decreased

B. Increased

C. Remained unchanged

D. The change cannot be determined

166. Which of the following particle size analysis method is more useful for analyzing particles for suspension formulations?

A. Microscopy

B. Sieving

C. Sedimentation

D. All of the above

167. Which of the following is **not** a method of crystallization?

169. Which of the following is **true** about of amorphous solids?

A. When stored above glass transition temperature, they become rubbery

B. When stored above glass transition temperature, they become brittle

C. When size reduction is desired, they should be processed at a temperature below glass transition temperature

D. B & C

170. Which of the following methods is applied to prevent "blinding" problems in particle size separation by sieving?

A. Use of horizontal and vertical motions

B. Use of air jet

C. Periodic reversal of sieve motion

D. All of the above

171. Of the following methods which is **not** used for particle size separation?

A. Microscopy

B. Sieving

C. Sedimentation

D. Elutriation

172. Which of the following is **not** the objective of particle size reduction?

A. To improve dissolution process

B. To improve extraction of compounds from plant parts

C. To facilitate drying

D. None of the above

173. Which of the following is considered in the selection process of equipment for particle size reduction?

A. Characteristics of the material

B. C. The initial particle size

C. The degree of size reduction desired

D. D. All of the above

174. Which of the following equipment is rarely used for size reduction of pharmaceuticals?

A. Fine grinding mills

B. Intermediate crushers

C. Coarse crushers

D. B and C

175. Which of the following milling equipment involves purely impact method during size reduction?

A. Cutter mill

B. Hammer mill

C. End-runner mill

D. Ball mill

176. Which of the following milling equipment employs mixed attrition and impaction methods during size reduction?

A. Cutter mill

B. Hammer mill

C. End-runner mill

D. Ball mill

177. The type of mixing that arises from transfer of large group of particles from one part of mixer (bed) to another is known as:

A. Convective mixing

B. Shear mixing

C. Diffusive mixing

D. None of the above

178. Which type of mixer is commonly used for mixing of lubricants, glidants, and anti-adherents with dried granules for tablet production?

A. Fluidized bed mixer-granulator

B. Low shear mixer-granulators

C. High shear mixer – granulators

D. Tumbling mixers

179. Which of the following equipment is used for mixing, granulating, drying and coating operations?

A. Twin – shell mixers

B. Fluidized bed mixer – granulator

C. Ribbon mixer

D. Planetary mixer

180. Reasons for producing free-flowing powder include all **except**:

A. To attain uniformity of tablet weight

B. To produce defect free tablets such as capping or lamination

C. To minimize die wall friction and dusting

D. None of the above

181. What is the angle of repose (θ) of a pile of powder with a 20 cm height at the apex and 40 cm diameter at the base?

A. 25.5 degree

B. 35 degree

C. 40 degree

D. 45 degree

182. Based on the angle of repose calculated on **QUESTION 181** above, flowability of the powder is:

A. Excellent

B. Good

C. Passable

D. Very poor

183. What is the percentage compressibility of a powder with bulk density and tapped density, 15 $g/cm^3$ and 20 $g/cm^3$, respectively?

A. 25% B. 33.3% C. 45% D. 67%

184. The type of glass suitable for packaging all types of pharmaceutical preparations is:

A. Type I

B. Type II

C. Type III

D. Type IV

185. The type of closure that indicates if unlawful access to the container contents has occurred:

A. Child resistant container

B. Tamper evident container

C. Blister pack

D. Strip pack

186. Which type of packaging material is highly recommended to pack a pharmaceutical product containing a drug that is degradable by the effect of light, oxygen and moisture?

A. Glass

B. Plastic

C. Metal

D. Paper

187. Which of the following pharmaceutical containers is always made of glass?

A. Bottles

B. Vials

C. Ampoules

D. Strip packs

188. A **false** statement about softgel capsules:

A. Have thinner dimension than hard gelatin capsules

B. Can be administered rectally

C. Can have oval, globular or oblong shapes

D. None of the above

189. One of the following is a major component of softgel shell:

A. Gelatin

B. Plasticizer

C. Water

D. All of the above

190. One of the following excipients is used as opacifier in softgel shell production:

A. Aluminum oxide

B. Quinoline

C. Indigo caramine

D. None of the above

191. Which of the following parameter is critical in the production process of soft gel capsules?

A. Temperature

B. Pressure

C. Timing

D. All of the above

192. Parenteral products are unique from other type pharmaceutical dosage forms because:

A. They must be sterile
B. They must be free from pyrogenic contamination
C. They must be prepared from highly pure ingredients
D. All of the above

193. The type of water that fulfills USP quality specifications and used in the production of sterile pharmaceuticals is:

A. Potable water
B. Purified water/distilled water
C. Water for injection
D. Water for preparations

194. A **false** statement about water-miscible solvents used in sterile products:

A. They are primarily used to enhance solubility and stability of drugs
B. The commonly used solvents are ethyl alcohol, liquid PEGs and propylene glycol
C. They are less frequently used than water
D. They can be used in high concentration if there is no compatibility problem with the drug

195. Which of the following statements is true about use of preservatives in parenterals?

A. Parenterals in multiple-dose containers must contain preservatives
B. Parenteral in single-dose containers must contain preservatives
C. There is no limit in the quantity of preservatives added as long as the concentration is sufficient to kill pathogenic microbes
D. Literatures show that preservatives are the main ingredients which have incompatibility with other ingredients and injection devices

196. Which of the following is **not** a role of buffer in sterile products?

A. Are used to stabilize solutions against chemical degradation

B. Are used to hinder precipitation at the site of injection

C. Are used to prevent aggregation of protein drugs

D. None of the above

197. A **false** statement about containers for parenterals:

A. Injectable formulations are packaged in containers made up of glass or plastic

B. All bags are plastics

C. Ampoules and vials can have capacities up to 100 mL

D. None of the above

198. Which of the following sterile products processing room should have class A or class 100 standard for products terminally sterilized?

A. Washing room

B. Filling and sealing/stoppering room

C. Sterilizing room

D. Packaging room

199. Which of the following liquid pharmaceuticals can be sterilized by membrane filters?

A. Solutions

C. Emulsions

B. Suspensions

D. Coarse colloids

200. Which one of the following statements is **not** justification for the preparation of dosage forms?

A. Because accurate dosing is difficult for small dose drugs

B. Because some drugs become inactive when exposed to environmental factors

C. Because some drugs have unpleasant organoleptic properties

D. None of the above

201. Which of the following factors should be considered when designing a dosage form?

A. Physicochemical properties
B. Disease condition to be treated
C. Age of the patient
D. All of the above

202. Which dosage forms are available in dispersible, enteric-coated, modified release, buccal and sublingual forms?

A. Powder
B. Suppository
C. Tablet
D. Syrup

203. Which of the following is **not** a solid dosage form?

A. Powder
B. Suppository
C. Tablet
D. Syrup

204. A type of dosage form designed to be sucked and remain in the mouth for up to 15 minutes is called:

A. Hard capsules
B. Soft capsules
C. Lozenges
D. Syrups

205. Which of the following formulations are sweetened, flavored, hydroalcoholic solutions intended for oral use?

A. Gargles
B. Elixirs
C. Linctuses
D. Liniments

206. Which one of the following statements is **false** about syrups?

A. They are liquid oral preparations.
B. They are aqueous solutions for rectal administration.
C. The vehicle is concentrated aqueous solution of sucrose or other sugar.
D. Sucrose when incorporated in syrups is known to cause dental carries.

207. Which of the following statements is **false** about oral route of drug administration?

A. It is the simplest and convenient route.

B. Unpleasant test of drugs may be felt.

C. There is irritation of gastric mucosa by some drugs.

**D. It is suitable route for administration of drug in unconscious patients.**

208. A prescription calls for: Enalapril 7.5 mg po BID for 60 days. If you have 5 mg tablets in your stock, how many tablets will it take to fill the prescription?

A. 90 B. 30 C. 180 D. 60

209. A prescription calls for: Fluoxetine HCL 20mg, 2 caps po BID #160. How many days will the prescription last?

A. 40 B. 20 C. 15 D. 30

210. Assume you received a pharmaceutical product with a manufacture date of February 2019. The expiration date of this product is not available on the carton, packaging, or the product itself. If the product has shelf life of 18 months to this date, when will be the expiration date of this product?

A. February 2020

B. August 2020

C. August 2019

D. June 2020

211. A prescription calls for: ondansetron10mg/5ml, 5ml po qid for 15 days. ondansetron10mg oral solution is available is available as 10mg/5mL in a 75 mL, 300 mL, 450mL and 500mL bottle sizes. Which bottle size should be dispensed to fill this prescription?

A. 450 mL
B. 75 mL
C. 300 mL
D. 500 mL

212. Which of the following activities is used to protect pharmaceutical products from moisture during storage?

A. Drunk the storeroom regularly
B. Lock the storeroom
C. Stack products on pallets at least 10 cm high and 30 cm away from walls
D. Keep food and drink out of the storeroom

213. One of the following is **not** an essential data item required to run a pharmaceutical logistics system?.

A. Stock on hand
B. HPMR
C. Losses/adjustments
D. Consumption data

214. If a hospital in Ethiopia has calculated total consumption of 200 packs for diclofenac tablets and if the product was available only for 25 days during RP, how much will be the maximum stock level for this facility?

A. 200 packs
B. 960 packs
C. 1000 packs
D. 800 packs

215. Which of the following is true regarding storage of pharmaceutical products?

A. Products should not be stored in their original shipping cartons

B. Cartons can be stacked more than 2.5m high

C. Place the cartons so that the first to expire are stacked at the back

D. Temperatures in the store room should not exceed 25°C

216. Which of the following is primary source of data for past drug consumption?

A. Bin card

B. Report and requisition form

C. Monthly report and re-supply form

D. Internal facility report and re-supply form

217. For TB patient kit, if the stock at 1st Meskerem was 130 kits, kits received during the year were 60 and 70 kits and the stock at the end of the year was 30 kits, how much will be the total consumption?

A. 150 kits B. 100 kits C. 230 kits D. 125 kits

218. The Report and Requisition Form (RRF) contains the following data items, **except:**

A. Order quantity

B. Quantities of pharmaceuticals used

C. Stock on hand

D. Unit price

219. Which type of inventory control system is used in the public pharmaceutical logistics system of Ethiopia?

A. Forced-ordering system
B. Continuous review system
C. Standard system
D. Staggered system

220. Which of the following is the best stock controlling mechanism for products which are managed by expiry date?

A. FIFO stock rotation
B. LIFO stock rotation
C. FEFO stock solution
D. FSN

221. Suppose you are asked to evaluate two antibiotics of the same therapeutic category for the treatment of CAP. The cost data for both antibiotics are provided in the following table. Based on documentation in the literature, both are assumed to be equal in terms of outcomes.

| **Cost/Day ($)** | **Antibiotic A** | **Antibiotic B** |
|---|---|---|
| Drug | 30.00 | 10.00 |
| Supply | 5.00 | 2.50 |
| Labor | 5.00 | 2.00 |
| Monitoring | 10.00 | 10.00 |

Which pharmacoeconomic evaluation method would you use for your decision and which antibiotic (antibiotic A or B) would be the preferred agent?

A. Cost minimization analysis --- antibiotic B
B. Cost effectiveness analysis --- antibiotic A

C. Lost benefit analysis ---------- antibiotic B

D. Cost utility analysis ----------- antibiotic A

222. Which of the following is true based on the outcome and cost data provided in the following table?

| Drug | Outcomes (Strokes prevented) | Total cost |
|---|---|---|
| A | 10 | $1000 |
| B | 50 | $6000 |

A. It costs $125 to prevent one additional stroke using drug B

B. Drug A is more cost effective

C. The incremental cost effectiveness ratio is $250/stroke prevented

D. Drugs A and B can be evaluated using cost utility analysis

223. True regarding quality of life measurements?

A. The utility weight for death is equal to 0.5

B. The utility weight for perfect health is equal to 1

C. The disability weight for death is equal to 0

D. The disability weight for perfect health is equal to 1

224. Drug A achieves additional 12 years of life and drug B achieves additional 10 years of life. The utility scores are 0.5 for drug A and 0.75 for drug B. Treatment costs for both drugs are equal. Which of the following is true according to these data?

A. Living 6 years on drug B is equivalent to living 1 year of perfect health

B. Living 7.5 years on drug A is equivalent to living 1 year of perfect health

C. Drug B is preferred over drug A

D. The two drugs can be compared using cost minimization analysis

225. Treatment A provides 6 QALYs and costs $30,000 while treatment B costs $40,000 and gives 8 QALYs. What is the incremental cost per QALY ratio comparing B to A?

A. $2,000

B. $3,500

C. $5,000

D. $15,000

226. One is odd:

A. Over-the-counter drug costs

B. Hospitalization charges

C. Patient travel cost to the hospital

D. Costs of IV drip set, syringe and needles and catheters

227. Which of the following is true regarding market equilibrium?

A. At market equilibrium, allocation of goods and services is at its most efficient

B. Market equilibrium can be attained easily in the healthcare market

C. At market equilibrium quantity demanded is higher than quantity supplied

D. At market equilibrium quantity supplied is higher than quantity demanded

228. One of the following is **not** a cause for market failure in healthcare?

A. Unequal information between buyers and sellers

B. Imperfect competition

C. Oligopoly market structure

D. Diminishing returns

229. Which of the following is out of pocket expenses specifically paid for medical services?

A. Direct medical costs

B. Direct nonmedical costs

C. Indirect costs

D. Intangible costs

230. All of the following are subject matters of pharmacoepidemiology **except:**

A. Predictors for medication use

B. Risk factors that predispose patients to ADRs

C. Frequency of ADRs and drug-drug interactions

D. Isolation and purification of active ingredients

231. Among the following, one is **not** limitation of premarketing clinical trials that necessitate for pharmacoepidemiology studies?

A. Narrow study population
C. Inaccurate data
B. Investigation of single indication
D. Short duration

232. A pregnant patient may wish to terminate pregnancy if there is a substantial risk for producing a seriously malformed child, but would also wish to proceed with the pregnancy if the risk is low. Where does the information on this risk of drugs on pregnancy can be obtained?

A. Clinical trial phase II
C. Post marketing surveillance
B. Clinical trial phase III
D. Preclinical trials

233. All of the following are roles of pharmacists in pharmacoepidemiology **except:**

A. Providing guidance on the development of reporting forms
B. Identifying and reporting adverse drug events
C. Development of formularies and STGs
D. Conduct drug use evaluations for drugs that have high risk of ADRs

234. The Cancer and Steroid Hormone study, in which women with breast cancer and a comparable group of women without breast cancer were asked about their prior use of oral contraceptives ("the Pill"). To which study design does this belong?

A. Experimental
C. Cross-sectional
B. Cohort
D. Case-control

235. All of the following are barriers for reporting a suspected ADR by healthcare professional **except**:

A. Availability of organized systems for reporting

B. Belief that only safe drugs are allowed on the market

C. Ambition to collect and publish a personal series of cases

D. Ignorance of the requirements for reporting

236. One of the following drug use indicators is used to measure degree of polypharmacy.

A. Percentage of drugs actually dispensed

B. Percentage of drugs prescribed by generic name

C. Availability of key drugs

D. Average number of drugs per encounter

237. A suspected ADR should be reported in all of the following situations **except:**

A. When it is unexpected, whatever its severity

B. When it is serious, whether expected or not

C. When it is expected and not sever

D. When it is a reaction to new drug, irrespective of its nature or severity

238. Percentage of encounters with an injection prescribed should be low. All of the following are reasons for this except:

A. Risk of drug resistance

B. Injectable are costly

C. There is high risk of drug- drug interactions

D. Injectable require trained personnel for administration

239. With respect to filtration unit operation in pharmaceutical industry, the rate of filtration can be enhanced by increasing the following parameters **except**:

A. Pore size of filter medium up to the possible limit

B. Viscosity of the liquid to be filtered

C. Pressure difference across the filter medium

D. Area of filter surface

240. In a given parenteral industry, there are proteins and peptides for commercial use. Which of the following dryers is appropriate for processing these products?

A. Tray dryer

B. Freeze dryer

C. Rotary dryer

D. Fluidized bed dryer

241. For processing a given excipient for pharmaceutical product, assume that there is a need for selecting dryer which works by convection heat transfer in a continuous manner to dry individual particles. Which of the following dryers is appropriate for processing these products?

A. Tunnel dryer

B. Vacuum dryer

C. Compartment dryer

D. Rotary dryer

242. The degree of size reduction in roller mill depends on:

A. Speed of rotation

B. The gap between the rollers

C, Diameter of the rollers

D. None of the above

243. For manufacturing of tablets, all are the parameters considered for selecting method of production **except:**

A. Size of dose

B. Stability of the formulation

C. Compatibility and fluidity of drug

D. Source of material (natural or synthetic)

244. For uncoated tablets being manufactured in industry X, there are capping and lamination signs from tablets. The possible solutions for correcting these problems include all **except:**

A. Pre-compression of the powder bed

B. Reducing the final compression pressure

C. Use of flat punches than deep concave punches

D. Complete drying of granules and powders

245. Picking and sticking problems was observed from tablets manufactured by industry Y. The possible solution for these problems can be:

A. Selecting enclosed letters and designed them as small as possible on punch faces

B. Use of low melting excipients in the formulation

C. Plating of punch faces with chromium

D. Decrease the amount of lubricant used in the formulation

246. One of the following is **not** directly compressible diluent:

A. Spray dried lactose

B. Dicalcium phosphate dehydrate

C. Starch

D. Microcrystalline cellulose

247. One of the following diluents is **not** used in the manufacturing of tetracycline tablets:

A. Spray dried lactose

B. Dicalcium phosphate dihydrate

C. Starch

D. Microcrystalline cellulose

248. ______are tablet excipients needed to give the required weight for the drug:

A. Glidants

B. Disintegrates

C. Diluents

D. Binders

249. The in process quality control for friability test of uncoated conventional tablets being manufactured in industry X resulted an initial weight of ten tablets 6.25 gram and final weight after testing was 5.98 gram. What can be said about the test result:

A. The sample failed the test as the percent loss is 4.3%

B. The sample failed the test as the percent loss is 27%

C. The sample failed the test as the percent loss is greater than 10%

D. The tablets are fit for commercial use since the percent loss is less than 5%

250. For tablets manufactured by industry X in Q265, the product failed disintegration test. The possible reasons include all **except**:

A. Use of excessive binders in the formulation

B. Use of less quantity of disintegrants

C. Use of excessive compression force for production

D. Use of high concentration of glidants

251. All are the properties of chlorofluorocarbon propellants used in pharmaceutical aerosols **except**:

A. Chemical inertness C. Non flammability

B. Free from ozone depletions D. Low explosiveness

252. The process of filling hard gelatin capsules involves:

A. Separation of caps from bodies →rectification →filling →replacement of caps and ejection

B. Rectification →Separation of caps from bodies →filling →replacement of caps and ejection

C. Filling → replacement of caps and ejection →rectification →Separation of caps from bodies

D. Rectification → Separation of caps from bodies → replacement of caps and ejection →Filling

253. One of the following is true about the water content of gelatin capsule shell:

A. It ranges 12-16%

B. If it exceeds 16%, it becomes brittle

C. If it is below 12%, is becomes soft and sticky

D. All of the above

254. All are physical methods of sterilization **except:**

A. Dry heat sterilization
B. Moist heat sterilization
C. Gas sterilization
D. Filtration

255. One of the following is enteric film former for tablet coating:

A. Hydroxyl propyl methylcellulose
B. Ethyl cellulose
C. Polyethylene glycols
D. Polyvinyl acetate phthalate

256. ___ involves application of one or more coats of waterproofing substance in sugar coating of tablets.

A. Sealing B. Sub coating C. Polishing D. Printing

257. One of the following propellants used in pharmaceutical aerosol doesn't have reservoir:

A. Chlorofluorocarbons
B. Hydrofluoroalkanes
C. Compressed Gases
D. None of the above

258. All are the desired drug properties of controlled release drug delivery system **except**:

A. Low therapeutic dose (≤ 500 mg )
B. Biological half-life: 2 – 8 hr
C. Narrow absorption window in the GIT
D. None of the above

259. With respect to formulation of a pharmaceutical suspension, one of the approaches is to prepare a suspension with slower rate of

sedimentation. All are possible ways to get such suspension **except:**

A. Reduction of the size of suspended particles

B. Minimizing the density difference between the particle and medium

C. Increasing the viscosity of the medium up to an optimum level

D. None of the above

260. **Not true** about sedimentation volume (F) of pharmaceutical suspension:

A. It is the ratio of the equilibrium volume of the sediment to the total volume of the suspension

B. F normally ranges between 0 and 1

C. The suspension is a good one when the value of F approaches to 0

D. All of the above

261. True about emulsifying agents used in pharmaceutical emulsions:

A. Emulsifying agents have a hydrophilic and a lipophilic portion

B. Emulsifying agents having a greater hydrophilic character than hydrophobic character will promote W/O emulsion

C. O/W emulsions are formed with the use of an emulsifying agent that is more hydrophobic than hydrophilic

D. All of the above

262. After preparation of pharmaceutical emulsions in the lab, separate layers of oils and water was observed. Which of the following is true about this stability problem?

A. This is creaming of emulsion

B. Redispersion can be achieved by shaking

C. It can be caused by addition of incompatible emulsifying agents

D. It can be corrected by increasing the storage temperature

263. The general method of suspension preparation will be used after incorporation of thickening agent as a dry powder with the other insoluble powders in the formula with vehicle. This method is followed for the preparation of the following drug suspension:

A. Light calcium carbonate

B. Phenobarbitone

C. Light Kaolin

D. Magnesium trisilicate

264. Which one of the following is true about potentials in pharmaceutical suspension?

A. Zeta potential is defined as the difference in potential between the actual surface and the electro neutral region of the solution.

B. If the zeta potential is above30mV the repulsive forces exceed the attractive forces

C. Nernst potential is more responsible for stability of suspension than the zeta potential

D. All of the above

265. ____ is liquid oral preparations that are usually prescribed for the relief of cough, containing high proportion of syrup, and to be swallowed slowly.

A. Collodions C. Liniments

B. Linctuses D. Elixirs

266. One of the following is **not true** about frequency distribution curve?

A. It is a plot of number /weight of particles lying within a certain size range Vs mean particle size

B. If two samples have the same average diameter they have also same distributions

C. It gives visual representation of the distribution that an average diameter cannot achieve

D. It tells most frequent particle size (mode)

267. Which one of the following is true powders property?

A. Porosity is the ratio of the void volume to the granular volume of the packing

B. Cubic packing has more porosity than rhombohedra packing

C. Highly compressed crystalline materials have porosity >50%

D. The true density of a sample includes the volume of the pores and voids within the sample

268. Which one of the following is **not true** about flow properties of powders?

A. Hausner ratio of less than 1.25 exhibits good flow properties
B. High density and low internal porosity tend to possess free flowing properties
C. Good flow properties can be achieved by spherical shape
D. Powders exhibit good flow ability when angle of repose is greater than 30 °C

269. All are advantages of suppository dosage form **except**:

A. Avoid gastrointestinal irritation.
B. Can be used in unconscious patients
C. Fast and complete absorption.
D. Used for people who cannot swallow oral medication

270. All are advantages of theobroma oil suppository base **except:**

A. Readily melted on warming and rapid setting on cooling.
B. Miscible with many ingredients.
C. Non-irritating.
D. No mould lubricant is necessary

271. All are true about pastes **except**:

A. They contain less proportion of solid materials than ointments
B. They are thicker and stiffer than ointment.
C. They are used as protective
D. They are less greasy than ointments

272. **Not true** about creams?

A. They are generally easier to spread after application

B. They are difficult to remove than many ointments from the application site

C. Cold creams are W/O type creams

D. Vanishing creams are O/W type creams

273. One of the following is water-soluble base:

A. Petrolatum

B. Lanolin

C. Polyethylene glycol

D. Anhydrous lanolin

274. **Not true** about passive diffusion

A. It is the preferred route for small lipophilic drugs

B. It is saturable process

C. The drug moves down the concentration gradient

D. It is energy independent process

275. The correct decreasing order of the bioavailability of a drug from various dosage forms:

A. Solutions > Suspensions > Capsules > Tablets > Coated Tablets

B. Coated Tablets > Enteric Coated Tablets > Tablets > Capsules > Solution

C. Suspensions > Capsules > Solutions > Tablets > Coated Tablets

D. Coated Tablets > Tablets > Capsules > Suspensions > Solutions

276. Regarding polymorphism, the correct order of solid drug dissolution is:-

A. Amorphous > metastable > stable

B. Stable > amorphous > metastable

C. Amorphous > stable > metastable

D. Stable > metastable > amorphous

277. **Wrong** statement about the plasma drug concentration data for orally administered drug:

A. At $t_{max}$ rate of absorption exactly equals rate of drug elimination

B. $t_{max}$ become smaller as absorption rate becomes more rapid

C. AUC reflects total amount of active drug that reaches systemic circulation.

D. $C_{max}$ is a measure of extent of drug absorption

278. According to the Biopharmaceutical Classification System (BCS), class II drugs are:

A. Highly soluble and Highly permeable

B. Highly soluble and Poorly permeable

C. Poorly soluble and Highly permeable

D. Poorly soluble and Poorly permeable

279. One of the following is **not true**.

A. To assure the quality of medicinal products, quality must be built in at each stage of the manufacturing process and not merely tested in.

B. End-product testing is adequate to ensure that the medicine is free from all manufacturing faults.

C. The idea of quality assurance is that batch-to-batch consistency should be maintained by reducing variability of all supporting processes and procedures

D. None of the above

280. Which of the following methods is used to determine whether a process functions properly for its intended use?

A. Capacity B. Inspection C. Validation D. Design review

281. Which one of the following is **not** a quality assurance measure?

A. Identifying the person having the overall responsibility for quality

B. Having laboratory equipment calibrated to recognized standards

C. Using reference materials

D. Providing a comprehensive marketing plan

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282. What is the relation between the standard deviation and the precision of a procedure?

A. The smaller the standard deviation, the greater the precision
B. The larger the standard deviation, the greater the precision
C. There is no relationship between standard deviation and precision
D. None of the above

283. The responsiveness of the method to small change in the concentration of analyte indicates,

A. Selectivity B. Sensitivity C. Linearity D. Precision

284. Confidence interval is used as a test for the following **except**;

A. Comparing the mean with true value
B. Comparing the means of two different data sets
C. Comparing the accuracy of two different data sets
D. Comparing the precisions of two different data sets

285. Which one the following is a true statement?

A. Ability of an analytical method to differentiate various substances in a sample is sensitivity of a method
B. Linearity can be viewed as the slope of a response curve
C. Systemic errors lead to the production of scattered measurements
D. Random errors lead to a mean which is not close to the true value

290. A pharmacy student decides to study an acid, by carefully adding a base to the solution through a titration. At the equivalence point of an acid-base titration _____

A. The entire base has been neutralized by the titrant

B. Half of the acid has been neutralized by the titrant

C. All the acid has been neutralized by the titrant

D. Half of the base has been neutralized by the titrant

291. Most of the elements that can be determined by atomic spectroscopy are:

A. Inert gases B. Non-metals C. Metals D. metalloids

292. Infrared spectroscopy provides valuable information about

A. Molecular weight C. Functional groups

B. Melting point D. Conjugation.

293. Which one of the following is true abut Beer Lamberts Law?

A. It relates frequency and wavelength

B. Absorbance is inversely proportional to concentration

C. It relates absorbance, concentration, path length and molar absorption coefficient

D. None of the above

294. Identify the wrong statement about electro analytical methods?

A. Electro analytical methods which measures a signal which is a function of phenomena occurring at the interface b/n electrode and the solution are called Interfacial methods

B. Electro analytical methods which measures the property of the whole solution are called bulk methods

C. Electro analytical methods measure either charge, current or potential under dynamic conditions

D. Electro neutrality is necessary to make the reduction-oxidation in an electrochemical to continue

295. Which of the following is not an advantage of HPLC over GC?

A. More versatile in adjusting separation parameters

B. A greater number of theoretical plates

C. Applicable to wider range of analytes

D. Gives a higher resolution compared to GC

296. In pharmaceutical practice, duty to avoid causing harm on others whether intentionally or unintentionally is called__.

A. Nonmaleficience

B. Beneficence

C. Justice

D. Confidentiality

297. A prescription that contains one of the following agents should be kept for at least 5 years **except:**

A. Haloperidol

B. Phenobarbitone

C. Amitriptyline

D. Vancomycin

298. Which requirement **is not** mandatory to have in pharmacy retail service?

A. Compounding service
B. Counseling area
C. Storage area
D. Adequate dispensing room

299. Which one of the following is doing a malpractice?

A. A druggist dispensing contraceptive pills without prescription
B. A pharmacist dispensing ciprofloxacin with prescription
C. A pharmacist dispensing diazepam with ordinary prescription
D. A druggist handling ceftriaxone in his drug store

300. Which product is prohibited to be handled in pharmacy retail outlets?

A. Medicated cosmetics
B. Beauty soaps
C. Insecticides
D. Compounding chemicals

## Answer Keys

### Part I

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1. C | 2.D | 3.D | 4.B | 5.B | 6.D | 7.B | 8.D | 9.A | 10.D |
| 11.A | 12.A | 13.B | 14.C | 15.D | 16.A | 17.B | 18.B | 19.D | 20.B |
| 21.B | 22.C | 23.A | 24.C | 25.A | 26.D | 27.B | 28.A | 29.D | 30.B |
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| 121.B | 122.A | 123.A | 124.A | 125.C | 126.B | 127.C | 128.B | 129.D | 130.A |
| 131.D | 132.A | 133.C | 134.D | 135.C | 136.D | 137.A | 138.D | 139.C | 140.C |
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| 201.D | 202.D | 203.C | 204.A | 205.C | 206.D | 207.B | 208.B | 209.B | 210.D |
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| | | | | | | | | | |
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| 251.D | 253.B | 253.C | 254.C | 255.C | 256.D | 257.C | 258.A | 259.C | 260.C |
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| 271.A | 272.A | 273.D | 274.C | 275.B | | | | | |

## Part II

| | | | | | | | | | |
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| 31.A | 32.D | 33.D | 34.C | 35.C | 36.D | 37.D | 38.D | 39.D | 40.D |
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| 51.C | 52.B | 53.D | 54.D | 55.C | 56.C | 57.D | 58.D | 59.A | 60.C |
| 61.C | 62.B | 63.B | 64.A | 65.C | 66.B | 67.C | 68.A | 69.A | 70.C |
| 71.A | 72.B | 73.D | 74.A | 75.C | 76.D | 77.A | 78.B | 79.D | 80.A |
| 81.C | 82.D | 83.D | 84.C | 85.C | 86.B | 87.A | 88.A | 89.A | 90.C |
| 91.D | 92.D | 93.D | 94.B | 95.C | 96.B | 97.C | 98.D | 99.C | 100.C |
| 101.D | 102.B | 103.A | 104.B | 105.D | 106.C | 107.D | 108.C | 109.A | 110.A |
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| 121.D | 122.C | 123.D | 124.A | 125.B | 126.D | 127.D | 128.B | 129.A | 130.C |
| 131.A | 132.D | 133.D | 134.D | 135.C | 136.D | 137.B | 138.C | 139.D | 140.B |
| 141.D | 142.B | 143.B | 144.D | 145.B | 146.A | 147.A | 148.D | 149.D | 150.A |
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| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
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| 191.D | 192.D | 193.C | 194.D | 195.A | 196.D | 197.D | 198.B | 199.A | 200.D |
| 201.D | 202.C | 203.D | 204.C | 205.B | 206.B | 207.D | 208.C | 209.A | 210.B |
| 211.C | 212.C | 213.B | 214.B | 215.D | 216.A | 217.C | 218.D | 219.A | 220.C |
| 221.A | 222.A | 223.B | 224.C | 225.B | 226.B | 227.A | 228.D | 229.A | 230.D |
| 231.A | 232.C | 233.C | 234.D | 235.A | 236.D | 237.C | 238.A | 239.B | 240.B |
| 241.D | 242.B | 243.D | 244.D | 245.C | 246.C | 247.B | 248.C | 249.A | 250.D |
| 251.B | 252.B | 253.A | 254.C | 255.D | 256.A | 257.C | 258.C | 259.D | 260.C |
| 261.A | 262.C | 263.B | 264.B | 265.B | 266.B | 267.B | 268.D | 269.C | 270.D |
| 271.A | 272.B | 273.C | 274.B | 275.A | 276.A | 277.D | 278.C | 279.B | 280.C |
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| 291.C | 292.C | 293.C | 294.C | 295.D | 296.A | 297.D | 298.A | 299.C | 300.C |

The Ethiopian Government is striving to improve the quality of education by implementing different strategies. As part of those efforts the government launched competency exam for health science students since 2019.

It was with this concern in mind that we undertook the task of writing preparatory questions for pharmacy students. These questions aid students to read their previous reading materials and prepare themselves for the competency-based exams. Thus, our main objective in developing this book was to provide the most essential information to guide reading in a concise, accurate and easy-to-read manner.

The Authors

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